JBKK



November 3, 2006

The Honorable Chairman and Members of the Hawaii Public Utilities Commission 465 South King Street Kekuanaoa Building, 1st Floor Honolulu, Hawaii 96813



Dear Commissioners:

Subject:

Docket No. 05-0069

Energy Efficiency Docket

In the Division of Consumer Advocacy's Opening Brief, Section III.B.1.a.(2), pages 54 and 55, the Consumer Advocate addressed the Participant Cost ("PC")Test filed by HECO for its proposed DSM programs and stated that the PC test results were lower than they should be. The attached Exhibit A provides the corrected calculation which replaces the revised benefit cost ratios on pages 61 and 62 in HECO/HELCO/MECO's ("the Companies") Opening Brief, filed October 25, 2006.

In Section III.A.7.c., pages 57-60 of its Opening Brief, the Companies addressed *EE DSM Avoided Costs*, and at page 60 committed to provide the parties/participants an alternative calculation. The attached Exhibit B provides the alternative calculation and a supporting explanation.

In Section VI.C.4., pages 211-217, the Companies addressed *EE DSM Docket Utility Compensation Proposals*, and at page 217 committed to provide the parties/participants a calculation of avoided capital costs in response to the Rocky Mountain Institute's alternative utility compensation mechanism. The attached Exhibit C provides the calculation and a supporting explanation.

If you have any questions on this matter, please contact me at 543-4622.

Sincerely,

Dean K. Matsuura

Director, Regulatory Affairs

Attachments

cc: Division of Consumer Advocacy

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Cost Effectiveness Results -- 20-YEAR PLANNING HORIZON (2006-2025)

	grant bereginh efte	B/C Ratio	
Program	TRC	UC	PC .
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	1.28	2.5 6	5.03
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	1.13	2.05	4.69
COMMERCIAL INDUSTRIAL CUSTOM REBATES	0.75	2.97	2.66
ENERGY SOLUTIONS FOR THE HOME	2.39	4.53	5.16
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	0.58	0.99	2.10
RESIDENTIAL NEW CONSTRUCTION PROGRAM	1.49	2.28	3.48
RESIDENTIAL LOW INCOME	4.96	2.41	NA
TOTAL	1.22	2.42	3.92

Cost Effectiveness Results -- 20-YEAR PLANNING HORIZON (2006-2025)

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Program	Lifetim e Benefits ¹	Lifetime Costs	Net Benefits	B/C Ratio
Total Resource Cost Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$120,999,359	\$94,308,896	\$26,690,463	1.28
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$48,010,155	\$42,562,089	\$5,448,066	1.13
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$73,730,977	\$98,819,764	(\$25,088,788)	0.75
ENERGY SOLUTIONS FOR THE HOME	\$102,446,532	\$42,807,877	\$59,638,655	2.39
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$38,888,629	\$66,560,103	(\$27,671,474)	0.58
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$63,052,341	\$42,441,563	\$20,610,777	1.49
RESIDENTIAL LOW INCOME	\$31,908,021	\$6,437,703	\$25,470,318	4.96
TOTAL	\$479,036,013	\$393,937,996	\$85,098,017	1.22
Utility Cost Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$120,999,359	\$47,257,501	\$73,741,858	2.56
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$48,010,155	\$23,369,990	\$24,640,165	2.05
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$73,730,977	\$24,840,922	\$48,890,055	2.97
ENERGY SOLUTIONS FOR THE HOME	\$102,446,532	\$22,594,415	\$79,852,117	4.53
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$38,888,629	\$39,196,089	(\$307,460)	0.99
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$63,052,341	\$27,702,435	\$35,349,906	2.28
RESIDENTIAL LOW INCOME	\$31,908,021	\$13,229,064	\$18,678,957	2.41
TOTAL	\$479,036,013	\$198,190,415	\$280,845,597	2.42
Ratepayer Impact Measure Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$120,999,359	\$329,581,395	(\$208,582,036)	0.37
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$48,010,155	\$133,939,761	(\$85,929,606)	0.36
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$73,730,977	\$227,201,725	(\$153,470,749)	0.32
ENERGY SOLUTIONS FOR THE HOME	\$102,446,532	\$134,457,721	(\$32,011,189)	0.76
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$38,888,629	\$106,336,850	(\$67,448,222)	0.37
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$63,052,341	\$86,929,026	(\$23,876,686)	0.73
RESIDENTIAL LOW INCOME	\$31,908,021	\$67,294,197	(\$35,386,176)	0.47
TOTAL	\$479,036,013	\$1,085,740,677	(\$606,704,664)	0.44
Participant Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$282,323,895	\$56,115,411	\$226,208,483	5.03
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$110,569,771	\$23,552,317	\$87,017,454	4.69
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$202,360,803	\$76,046,097	\$126,314,707	2.66
ENERGY SOLUTIONS FOR THE HOME	\$111,863,306	\$21,678,462	\$90,184,844	5.16
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$67,140,761	\$31,957,349	\$35,183,41 3	2.10
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$59,226,5 91	\$17,036,425	\$42,190,166	3. 48
RESIDENTIAL LOW INCOME	\$54,065,13 3	\$0	\$54,065,133	NA
TOTAL	\$887,550,261	\$226,386,061	\$661,164,200	3. 92

¹Avoided costs based on HECO System Planning estimates (DSM AC 2006A r2B.xls).

Cost Effectiveness Analysis - Input Summary Table HECO ENERGY EFFICIENCY DOCKET

General Data

Discount Rate (%)

8.09%

General Escalation Rate (%)

2.20%

Avoided Costs Escalation Rate

2.20%

Program Start Year Analysis Framework

2006 20-YEAR PLANNING HORIZON

Externality Factor:

0%

Table Titles:

DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY

Customer to Generation Ratio:

11.17%

FROM Docket DSM Backup Sheets (date).xls FILE:

Program-Specific Data

		Measure	Net to G	oss Ratio ¹	Retail	Rate ²
Program	Program Name	Lifetime	Energy	Demand	Energy (\$/kWh)	Demand (\$/kW)
1. CIEE	COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	15	0.6530	0.6640	0.161	46
2. CINC	COMMERCIAL INDUSTRIAL NEW CONTRUCTION	15	0.5960	0.6100	0.161	46
3. CICR	COMMERCIAL INDUSTRIAL CUSTOM REBATES	15	0.7590	0.7550	0.161	46
4. ESH	ENERGY SOLUTIONS FOR THE HOME	15	0.8500	0.8500	0.197	0
5. REWH	RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	15	0.7290	0.7310	0.197	0
6. RNC	RESIDENTIAL NEW CONSTRUCTION PROGRAM	15	0.8410	0.8850	0.197	0
7. RLI	RESIDENTIAL LOW INCOME	15	1.0000	1.0000	0.197	0
8. RDLC	RESIDENTIAL DIRECT LOAD CONTROL	15	1.0000	1.0000	0.197	0
9. CIDLC	COMMERCIAL INDUSTRIAL DIRECT LOAD CONTROL	15	1.0000	1.0000	0.161	46

^{1.} Source: HECO A&S Report for existing programs; estimated values for new programs based on program experience.

^{2.} Source: October 2005 recorded revenue per kwh for residential and commercial (Scheds J &P) customers. ECAF based on \$59.71/bbl LSFO.

Exhibit A Page 4 of 11

HECO Energy Efficiency Docket CE Analysis DOCKET (OLD AC w ROC) (11-03-06) xls

TABLE 1. CIEE: DETAILED SUMMARY FOR 2006 START YEAR – 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY

8%	2.2%	15
Discount Rate	General Esculation Rate	Measure Lifetime (years)

CE Analysis DOCKET (OLD AC w ROC) (11-03-06).xls

Pancfits Casts Nct.Bencfits D.C. Banis State State	2006 2007 [et Syntem Level] 2.284 4.567	Lancing (AWh) 13,08,241 14,08,324,101 14,08,324,101 14,08,324,101 14,08,324,101 14,08,324,101 14,08,324,101 14,08,324,101 14,08,34,104,104,104,104,104,104,104,104,104,10	2006 2007 2008	BENCETT CAAL-CLATIONS: Avoided Coats (Utility, Rateps) NPY	\$120,999,359 \$2,085,236 \$4,098,367 \$5,922,166	Abroided Could Cloud Cloud Could Could Could Cloud Clo	Acolded Costs, (Participant) Demand Energy \$105,047 \$214,716 \$329,160 Energy \$232,331 \$322,623,73 \$170,523 \$100,532 \$232,331 \$324,503 \$100,532 \$232,331 \$324,503 \$100,532	nat. Inputs. \$1,612,906 \$1,643,834 \$1,687,036 Incentives \$2,265,425 \$2,265,425 \$2,265,425 Participant \$5,917,290 \$6,047,470 \$6,180,515	LECK. Total Participant Coata	Total RIM Com. \$329,581,395 \$6,442,759 \$9,150,950 \$11,987,973 \$14,932,217 \$18,013,288	Total Utility Coats \$47,257,501 \$3,878,331 \$3,009,259 \$3,952,461 \$3,982,492	Total TRC Coats 894-308-896 \$7.530,196 \$7,691,304 \$7,867,551
g	2002	61,064,703 76,3 \$49.10	2002	\$1,241,887 . \$1,656,314 \$4,680,273 . \$6,327,081 . \$7,5		\$1,656,314 \$6,527,081 \$8,183,395	\$+48,536 10,501,189 \$1	\$1,717,067 \$2,265,425 \$6,316,486	H,837,164	73 \$14,932,217 \$18,0		\$7,691,304 \$7,867,551 \$8,033,553 \$8,215,038
	3	\$50.18 \$51.29 \$0.18 \$51.29 \$0.1758 \$0.1796	2010 2011	0\$ 0\$ 0\$ 04 5461,948 0\$	\$7,549,405 \$9,194,897	\$0 \$0.194,897 \$7,549,405 \$9,194,897 \$7,549,405	\$573,004 \$702,497 13,415,269 \$16,448,687 13,088,277 \$17,151,183	\$1,759,590 \$1,821,017 \$2,265,425 \$2,315,264 \$6,455,449 \$6,597,469	\$4,976,126 \$5,085,601	313,288 \$21,287,465	\$4,025,015 \$4,136,281	215.038 \$8.418.486
	2012	\$52.42 \$0.1836	2012	\$0	\$10,925,926	\$0 \$10,925,926 \$10,925,926	\$820,911 \$19,277,730	7 \$1,884,659 4 \$2,366,200° 56,742,613	15,197,484	\$24,349,500	1 \$4,250,859	CTC TCA 88
		\$53.57 \$0.1876	2013	\$0 \$12,264,198 \$1	1	\$0 \$12,264,198 \$1 \$12,264,198 \$1	\$942,290 \$ \$22,190,648 \$2 \$21,132,930 \$2	\$1,950,597 \$ \$2,418,257 \$ \$6,890,950 \$	\$5,311,829	\$27,501,792	\$4,368,854	91 110 00
		\$54.75 \$55.95 \$0.1917 \$0.1960	2014	\$0 \$32,740,406 \$14,307,415 -\$20,191,792	\$14,307,415 \$12,548,614	\$0 \$12,740,406 \$14,307,415 -\$20,191,792 \$14,307,415 \$12,548,614	\$1,067,199 \$1,197,147 \$25,199,781 \$28,330,575 \$26,266,980 \$29,527,723	\$2,018,916 \$2,08 \$2,471,458 \$2,52 \$7,042,551 \$7,19	\$5,428,689 \$5,548,120	\$30,757,354 \$34,143,256	14,490,374 14,615,534	200 000 000 000 000
		\$77,800 131,432,316 \$55.95 \$57.18 \$0.1960 \$0.2003	2015 2016	3,406 \$38,133,480 1,792 -\$ 20,090,123	ı	1,792 -\$20,090,123 8,614 \$18,043,357	\$1,197,147	\$2,689,703 \$2,163,050 \$2,525,830 \$2,581,398 \$7,197,487 \$7,355,832	611,076,5\$ 021,8	3,256 \$36,351,041	5,534 \$4,744,449	
		5 158,487,172 8 \$58.44 3 \$0.2047	2017	0 \$35,938,081 3 -\$18,828,788	7 \$17,109,293	0 \$35,938,081 3 -\$18,828,788 7 \$17,109,293	8 \$1,365,915 4 \$32,396,725 2 \$33,762,641	0 \$2,239,051 8 \$2,638,189 2 \$7,517,660	9 \$5,794,923	1 \$38,639,881	9 \$4,877,240	200
		\$59.73 \$0.2092	2018	\$34,419,844 -\$19,049,998	\$15,369,846 \$	\$34,419,844 \$19,049,998 \$15,369,846	\$1,454,994 \$34,543,265 \$35,998,258	\$2,317,803 \$2,696,229 \$7,683,049	\$5,922,411	\$41,012,291	\$5,014,032	* ***
		\$61.04 \$61.04 \$0.2138	2019	\$33,066,871 \$31, -\$18,749,665 -\$18,	\$14,317,206 \$13,	\$33.066,871 \$31, \$18,749,665 -\$18, \$14,317,296 \$13,	\$1,547,330 \$1, \$36,768,571 \$39, \$38,315,901 \$40.	\$2,399,409 \$2, \$2,755,546 \$2, \$7,852,076 \$8,	\$6,052,704 \$6,	\$43,470,856 \$46,	\$5,154,955 \$5,	200 220 000
	7	1/8,851,141 /85,418,506 \$6238 \$63.76 \$0.2185 \$0.2233	2020	\$31,793,248 \$31,358,868 -\$18,701,127 -\$18,545,706	\$13,092,121 \$12,813,162	\$31,793,248 \$31,358,868 -\$18,701,127 -\$18,545,706 \$13,092,121 \$12,813,162	\$1,643,025 \$1,738,849 \$39,075,073 \$41,401,117 \$40,718,098 \$43,139,965	\$2,483,973 \$2,571,605 \$2,816,168 \$2,878,124 \$8,024,822 \$8,201,368	\$6,185,864 \$6,321,953	\$46,018,239 \$48,589,694	\$5,300,141 \$5,449,729	CEO CEE 010 20E 002 010
		18,506 185,//5,5/4 \$63.76 \$65.16 4).22.33 \$0.2282	2021 2022	868 \$30,374,562 706 -\$20,305,865	162 \$10,068,697	868 \$30,374,562 706 -\$20,305,865 162 \$10,068,697	849 \$1,779,185 117 \$42,393,378 965 \$44,172,563	505 \$2,662,419 124 \$2,941,443 368 \$8,381,798	953 \$6,461,036	694 \$49,776,424	729 \$5,603,861	200110111
		\$66.59 \$0.2332	2023	\$29,433,054 -\$20,737,029	\$8,696,025	\$29,433,054 -\$20,737,029 \$8,696,025	\$1,820,456 \$43,409,260 \$45,229,715	\$2,756,531 \$3,006,155 \$8,566,197	\$6,603,178	\$50,992,401	\$5,762,686	901 001
	2024		2024	-\$11,260,225 -4 \$25,697,232 \$	\$14,437,007	-\$11,260,225 -9 \$25,697,232 1 \$14,437,007	\$1,862,680 \$44,449,322 \$46,312,003	\$2,854,064 \$3,072,290 \$8,754,654	\$6,748,448	\$52,238,357	\$5,926,354	011 2/10 710
	2025	\$69.55 \$0.2436	2025	\$20,388,248 \$26,993,367	\$6,605,119	\$20,388,248 \$26,993,367 \$6,605,119	\$1,905,882 \$45,514,138 \$47,420,020	\$2,955,145 \$3,139,880 \$8,947,256	\$6,896,914	\$53,515,045	\$6,095,026	£11 902 401

TABLE 2. CINC: DETAILED SUMMARY FOR 2006 START YEAR - 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: COMMERCIAL INDUSTRIAL NEW CONTRUCTION

Net Benefits B/C Ratio

Discount Rate	800
General Escalation Rate	2.2%
Measure Lifetime (years)	15

Benefits

Participant Test	\$110,569,771	\$23,552,317	\$87,017,454	4.69																	
Ratepayer Impact Measure Test	\$48,010,155	\$133,939,761	(\$85,929,606)	0.36																	
Utility Cost Test	\$48,010,155	\$23,369,990	\$24,640,165	2.05																	
Total Resource Cost Test	\$48,010,155	\$42,562,089	\$5,448,066	1.13																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Savings (Net System Peak Demand Reduction (kW)	m Level)	874	1 7 17	2.00		1.740															
Energy Savings (kWh)		5,823,049	1,747 11,646,098	2,621 17,469,147	3,494	4,368 29,115,244	5,235	6,013	6,765	7,506	8,246	8,763	9,279	9,796	10,312	10,829	11,194	11,194	11,194	11,194	11,194
raicigy Savings (awn)		3,823,049	11,040,098	17,409,147	23,292,196	29,113,244	34,908,090	40,135,614	45,239,107	50,288,753	55,338,400	58,668,649	61,998,897	65,329,145	68,659,393	71,989,642	74,068,615	74,068,615	74,068,615	74,068,615	74,068,615
Raics																					
Demand (\$/kW)		\$46.00	\$47.01	\$48.05	\$49.10	\$50.18	\$51.29	\$52.42	\$53.57	\$54.75	\$55.95	\$57.18	\$58.44	\$59.73	\$61.04	\$62.38	\$63.76	\$ 65.16	\$ 66.59	\$68.06	\$69.55
Energy (\$/kWh)		\$0.1611	\$0.1646	\$0.1683	\$0.1720	\$0.1758	\$0.1796	\$0.1836	\$0.1876	\$0.1917	\$0.1960	\$0.2003	\$0,2047	\$0.2092	\$0.2138	\$0.2185	\$0.2233	\$0.2282	\$0.2332	\$0.2383	\$0.2436
											-	•	•	•	•		•	*********	•0.200	•	•
		2006	2007	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS: Avoided Costs (Utility, Ratenay																					
Demand	NPV	\$157.526	\$316.106	\$475.043	8412 540	***															
Energy		\$638,302	\$1,248,048	\$1,785,218	\$633,569 \$2,489,655	\$0 \$2,879,605	\$0	\$0	\$0	-	\$12,618,512	\$14,928,153	\$14,268,087	\$13,840,772	\$13,452,134	\$13,072,217		\$12,452,352	\$12,052,267	-\$4,605,461	-\$8,329,121
Total	\$48,010,155	\$795.827	\$1,564,154	\$2,260,261	\$3,123,224	\$2,879,605	\$3,505,030 \$3,505,030	\$4,175,737 \$4,175,737	\$4,690,671 \$4,690,671	\$5,474,419 \$5,474,419	-\$7,728,580 \$4,889,932	-\$7,783,403 \$7,144,750	-\$7,374,976	-\$7,536,068	-\$7,484,691	-\$7,527,419	-\$7,408,402	-\$8,095,946	-\$8,251,999		\$10,700,585
10.2	440,010,133	4 175,027	#1,,,17,17	#2,200,201	\$3,123,224	42, 877,003	\$3,303,030	34, 173,737	\$4,050,071	\$3,474,419	\$4,08 9,932	\$7,144,750	\$6,893,111	\$6,304,704	\$5,967,442	\$5,544,798	\$5,462,539	\$4,356,406	\$3,800,268	\$5,600,810	\$2,371,464
Avoided Costs (Total Resource)).																				
Demand		\$157,526	\$316,106	\$475,043	\$633,569	\$0	\$0	\$0	\$0	\$0	\$12,618,512	\$14,928,153	\$14,268,087	\$13.840.772	\$13,452,134	\$13,072,217	\$12,870,941	\$12,452,352	\$12,052,267	-\$4,605,461	-\$8,329,121
Energy	_	\$638,302	\$1,248,048	\$1,785,218	\$2,489,655	\$2,879,605	\$3,505,030	\$4,175,737	\$4,690,671	\$5,474,419	-\$7,728,580	-\$7,783,403	-\$7,374,976	-\$7,536,068	-\$7,484,691	-\$7,527,419	-\$7.408.402	-\$8.025.246	-\$8,251,999		\$10,700,585
Total	\$48,010,155	\$795,827	\$1,564,154	\$2,260,261	\$3,123,224	\$2,879,605	\$3,505,030	\$4,175,737	\$4,690,671	\$5,474,419	\$4,889,932	\$7,144,750	\$6,893,111	\$6,304,704	\$5,967,442	\$5,544,798	\$5,462,539	\$4,356,406	\$3,800,268	\$5,600,810	\$2,371,464
4.14.16																					
Avoided Costs (Participant) Demand		\$40.182	\$82.133	8105.000		****															
Energy		\$938.093	\$1,917,462	\$125,909 \$2,939,470	\$171,573 \$4,005,518	\$219,184 \$5,117,049	\$268,499 \$6,270,124	\$315,170	\$362,408	\$410,921	\$461,394	\$501,082	\$542,294	\$585,076	\$629,479	\$675,551	\$713,693	\$729,395	\$745,441	\$761,841	\$778,602
Total	\$110,569,771	\$978,276	\$1,999,595	\$3,065,379	\$4,177,090	\$5,336,233	\$6,538,622	\$7,367,681 \$7,682,851	\$8,487,227 \$8,849,635	\$9,642,143 \$10.053.064	\$10,843,768 \$11,305,161	\$11,749,262 \$12,250,344	\$12,689,349		\$14,677,671	\$15,728,166	\$16,538,389		\$17,274,083		
	•110pas,711	\$710,270	*1,777,373	41,000,000	44,177,000	ورغرناوررو	\$0,550,022	#1,002,031	\$0,04 9,033	\$10,033,064	\$11,303,161	\$12,230,344	\$13,231,643	\$14,250,190	\$15,307,150	\$16,403,718	\$17,252,082	\$17,631,628	\$18,019,524	\$18,415,954	\$18,821,105
COST CALCULATIONS:																					
Cost Inputs:																					
Implementation		\$947,623	\$978,219	\$1,000,092	\$1,023,034	\$1,042,763	\$1,080,141	\$1,118,891	\$1,159,062	\$1,200,709	\$1,243,885	\$1,288,648	\$1,335,057	\$1,383,173	\$1,433,060	\$1,484,783	\$1,538,413	\$1,594,018	\$1,651,674	\$1,711,457	\$1,773,446
Incentives		\$936,020	\$936,0 2 0	\$936,020	\$936,020	\$936,020	\$956,613	\$977,658	\$999,167	\$1,021,148	\$1,043,614	\$1,066,573	\$1,090,038	\$1,114,019	\$1,138,527	\$1,163,575	\$1,189,173	\$1,215,335	\$1,242,072	\$1,269,398	\$1,297,325
Participant	\$ TP\$7	\$2,424,795	\$2,478,141	\$2,532,660	\$2,588,378	\$2,645,322	\$2,703,520	\$2,762,997	\$2,823,783	\$2,885,906	\$2,949,396	\$3,014,283	\$3,080,597	\$3,148,370	\$3,217,634	\$3,288,422	\$3,360,768	\$3,434,704	\$3,510,268	\$3,587,494	\$3,666,419
Total Participant Costs	NPY \$23,552,317	\$1,866,927	\$1,920,272	\$1,974,792	\$2,030,510	\$2.087.454	FO 122 270	25 400 242	## *** ***	en 477 400	** ***										
ZUM I BUILDEM COMB	#4-J-J-J-G-111	\$1,000,727	#1,920,212	\$1,974,792	\$2,030,510	\$4,067,434	\$2,133,378	\$2,180,313	\$2,228,280	\$2,277,302	\$2,327,402	\$2,378,605	\$2,430,935	\$2,484,415	\$2,539,072	\$2,594,932	\$2,652,020	\$2,710,365	\$2,769,993	\$2,830,933	\$2,893,213
Total RIM Costs	\$133,939,761	\$2.861.918	\$3,913,834	\$5,001,492	\$6,136,145	\$7,315,016	\$8,575,376	\$9,779,401	\$11,007,864	\$12,274,921	\$13,592,660	\$14,605,565	\$15,656,738	\$16,747,382	£17 070 73/	£10.050.07/	*10.070.440	**** * * * * * * * * * * * * * * * * * *	#20 05 2 274	P21 207 000	P3+ 804 675
	,		1-1. 10,001	,,	40,100,140	4,12,230,10	40,010,010	***************************************	411,007,004	4144,761	#1JJJ94,000	\$14,003,303	#1.3,030,738	#10,747,38Z	\$17,878,736	\$19,052,076	\$19,979,668	\$20,440,982	\$20,913,271	\$21,396,809	\$21,891,875
Total Utility Costs	\$23,369,990	\$1,883,643	\$1,914,239	\$1,936,112	\$1,959,054	\$1,978,783	\$2,036,754	\$2,096,549	\$2,158,229	\$2,221,857	\$2,287,499	\$2,355,221	\$2,425,095	\$2,497,191	\$2,571,587	\$2,648,358	\$2,727,586	\$2,809,353	\$2,893,747	\$2,980,855	\$3,070,771
								. ,	. ,	, ,		V., _ 50 page 1	,.,,.,,,,,,	+-, .,,,,,	4	4=, 0 10,200	₩ ₩,1₩1,500	# anjus 25,233	#a,073,141	-m,>00,000	#3,010,111
Total TRC Costs	\$42,562,089	\$3,372,418	\$3,456,359	\$3,532,752	\$3,611,412	\$3,688,085	\$3,783,661	\$3,881,888	\$3,982,845	\$4,086,615	\$4,193,281	\$4,302,931	\$4,415,654	\$4,531,543	\$4,650,694	\$4,773,206	\$4,899,180	\$5,028,723	\$5,161,942	\$5,298,951	\$5,439,864
																			,		

Exhibit A Page 5 of 11

TABLE 3, CICR: DETAILED SUMMARY FOR 2006 START YEAR — 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: COMMERCIAL INDUSTRIAL CUSTOM REBATES

Discount Rate	8%
General Escalation Rate	2.2%
Measure Lifetime (years)	15

Participant Test Ratepayer Impact Measure Test Utility Cost Test Fotal Resource Cost Test	Benefits \$202,360,803 \$73,730,977 \$73,730,977 \$73,730,977	Costs \$76,046,097 \$227,201,725 \$24,840,922 \$98,819,764	Net Benefits \$126,314,707 (\$153,470,749) \$48,890,055 (\$25,088,788)	B/C Ratio 2.66 0.32 2.97 0.75																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Savings (Net System	n Level)								-												
Peak Demand Reduction (kW)		1,245		3,736	4,981	6,227	7,472	8,718	9,963	11,208	12,454	13,699	14,944	16,190	17,435	18,680	18,680	18,680	18,680	18,680	18,680
Energy Savings (kWh)		9,583,078	19,166,156	28,749,233	38,332,311	47,915,389	57,498,467	67,081,544	76,664,622	86,247,700	95,830,778	105,413,856	114,996,933	124,580,011	134,163,089	143,746,167	143,746,167	143,746,167	143,746,167	143,746,167	143,746,167
Rates																					
Demand (\$/kW)		\$46.00	\$47.01	\$48.05	\$49.10	\$50.18	\$51.29	\$52.42	\$53.57	\$54.75	\$55.95	\$57.18	\$ 58.44	\$59.73	\$61.04	\$62.38	\$63.76	\$65.16	\$66.59	\$68.06	\$69.55
Energy (\$/kWh)		\$0.1611	\$0.1646	\$0.1683	\$0.1720	\$0.1758	\$0.1796	\$0.1836	\$0.1876	\$0.1917	\$0.1960	\$0.2003	\$0.2047	\$0.2092	\$0.2138	\$0.2185	\$0.2233	\$0,2282	\$0.2332	\$0.2383	\$0.2436
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS:																					
Avoided Costs (Utility, Ratepay Demand	NPY	\$224,580	\$450,662	\$677.254	\$903,259	% 0	\$0	\$0	\$0	\$0	\$19,056,734	\$23,337,406	\$22,978,731	\$22,874,722	\$22,743,315	\$22,550,100	\$21,478,660	\$20.780.131	\$20,112,480	-\$7,685,462	-\$13,899,401
Energy		\$1,050,462	\$2,053,931	\$2,937,960	\$4,097,262	\$4,739,008	\$5,773,271	\$6,979,211	\$7,949,064	\$9,388,899	-\$13,383,759	-\$13.984.958	-\$13,679,269	-\$14,370,974	-\$14.625.374	-\$15,030,462	-\$14.377.606	-\$15,711,933	-\$16,014,788	\$19,807,476	\$20,766,800
Total	\$73,730,977		\$2,504,593	\$3,615,215	\$5,000,521	\$4,739,008	\$5,773,271	\$6,979,211	\$7,949,064	\$9,388,899	\$5,672,976	\$9,352,448	\$9,299,462	\$8,503,748	\$8,117,940	\$7,519,638	\$7,101,054	\$5,068,198		\$12,122,014	\$6,867,399
Avoided Costs (Total Resource)																					
Demand	4	\$224,580	\$450,662	\$677,254	\$903,259	\$0	\$0	\$0	\$0	\$0	\$19,056,734	\$23,337,406	\$22,978,731	\$22,874,722	\$22,743,315	\$22,550,100	\$21,478,660	\$20,780,131	\$20,112,480	-\$7,685,462	-\$13,899,401
Energy		\$1,050,462	\$2,053,931	\$2,937,960	\$4,097,262	\$4,739,008	\$5,773,271	\$6,979,211	\$7,949,064	\$9,388,899	-\$13,383,759	-\$13,984,958	-\$13,679,269	-\$14,370,974	-\$14,625,374	-\$15,030,462	-\$14,377,606	-\$15,711,933	-\$16,014,788	\$19,807,476	\$20,766,800
Total	\$73,730,977	\$1,275,042	\$2,504,593	\$3,615,215	\$5,000,521	\$4,739,008	\$5,773,271	\$6,979,211	\$7,949,064	\$9,388,899	\$5,672,976	\$9,352,448	\$9,299,462	\$8,503,748	\$8,117,940	\$7,519,638	\$7,101,054	\$5,068,198	\$4,097,692	\$12,122,014	\$6,867,399
Avoided Coats (Participant)																					
Demand		\$57,287	\$117,094	\$179,505	\$244,606	\$312,484	\$383,230	\$456,938	\$533,704	\$613,626	\$696,806	\$783,349	\$873,363	\$966,959	\$1,064,250	\$1,165,354	\$1,190,991	\$1,217,193	\$1,243,971	\$1,271,339	\$1,299,308
Energy		\$1,543,834	\$3,155,596	\$4,837,529	\$6,591,940	\$8,421,203	\$10,327,763	\$12,314,137	\$14,382,912	\$16,536,753	\$18,778,401	\$21,110,679	\$23,536,488	\$26,058,815	\$28,680,732	\$31,405,402	\$32,096,321	\$32,802,440	\$33,524,093	\$34,261,623	\$35,015,379
Total	\$202,360,803	\$1,601,121	\$3,272,690	\$5,017,034	\$6,836,545	\$8,733,687	\$10,710,994	\$12,771,075	\$14,916,615	\$17,150,378	\$19,475,207	\$21,894,028	\$24,409,851	\$27,025,773	\$29,744,982	\$32,570,755	\$33,287,312	\$34,019,633	\$34,768,065	\$35,532,962	\$36,314,687
COST CALCULATIONS:																					
Cost Inputs:																					
Implementation		\$1,220,696	\$1,255,101	\$1,284,998	\$1,316,284	\$1,344,572	\$1,393,880	\$1,445,023	\$1,498,069	\$1,553,089	\$1,610,159	\$1,669,354	\$1,730,755	\$1,794,445	\$1,860,509	\$1,929,036	\$2,000,120	\$2,073,857	\$2,150,345	\$2,229,689	\$2,311,996
Incentives		\$743,936	\$743,936	\$743,936	\$743,936	\$743,936	\$760,302	\$777,029	\$794,123	\$811,594	\$829,449	\$847,697	\$866,346	\$885,406	\$904,885	\$924,792	\$945,138	\$965,931	\$987,181	\$1,008,899 \$10,254,018	\$1,031,095 \$10,507,397
Participant	NPY	\$5,529,133	\$6,819,165	\$6,982,447	\$7,149,912	\$7,321,677	\$7,497,865	\$7,678,601	\$7,864,015	\$8,054,241	\$8,249,418	\$8,449,690	\$8,655,202	\$8,866,109	\$9,082,568	\$9,304,740	\$9,532,795	\$9,766,905	\$10,007,251	\$10,234,016	\$10,307,397
Total Participant Costs	\$76,046,097	\$4,964,486	\$6,254,518	\$6,417,800	\$6,585,265	\$6,757,030	\$6,920,796	\$7,088,836	\$7,261,275	\$7,438,241	\$7,619,867	\$7,806,288	\$7,997,646	\$8,194,086	\$8,395,760	\$8,602,823	\$8,815,435	\$9,033,764	\$9,257,981	\$9,488,263	\$9,724,796
Total RIM Costs	\$227,201,725	\$3,565,752	\$5,271,726	\$7,045,968	\$8,896,765	\$10,822,194	\$12,865,176	\$14,993,126	\$17,208,807	\$19,515,062	\$21,914,816	\$24,411,080	\$27,006,953	\$29,705,624	\$32,510,376	\$35,424,584	\$36,232,570	\$37,059,420	\$37,905,591	\$38,771,550	\$39,657,778
Total Utility Costs	\$24,840,922	\$1,964,632	\$1,999,036	\$2.028.934	\$2,060,220	\$2.088.507	\$2,154,182	\$2,222,051	\$2,292,192	\$2,364,684	\$2,439,608	\$2,517,051	\$2,597,102	\$2,679,851	\$2,765,394	\$2,853,829	\$2,945,258	\$3,039,787	\$3,137,526	\$3,238,588	\$3,343,091
				,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	,,	•-•		•										*** ***	*********	## ## TOT	#10 910 3 03
Total TRC Costs	\$98,819,764	\$6,749,829	\$8,074,265	\$8,267,446	\$8,466,196	\$8,666,249	\$8,891,745	\$9,123,623	\$9,362,083	\$9,607,331	\$9,859,577	\$10,119,044	\$10,385,958	\$10,660,554	\$10,943,076	\$11,233,776	\$11,532,915	\$11,840,762	\$12,157,596	\$12,483,707	\$12,819,393

TABLE 4. ESH: DETAILED SUMMARY FOR 2006 START YEAR - 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: ENERGY SOLUTIONS FOR THE HOME

Discount Rate	8%
General Escalation Rate	2.2%
Measure Lifetime (years)	15

	Benefits	Costs	Net Benefits	B/C Ratio																	
Participant Test	\$111,863,306	\$21,678,462	\$90,184,844	5.16																	
Ratepayer Impact Measure Test	\$102,446,532	\$134,457,721	(\$32,011,189)	0.76																	
Utility Cost Test	\$102,446,532	\$22,594,415	\$79,852,117	4.53																	
Fotal Resource Cost Test	\$102,446,532	\$42,807,877	\$59,638,655	2.39																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Savings (Net System	n Level)							40.045		11070	15,760	17,230	18,700	18,700	18,700	18,700	18,700	18,700	18,700	18,700	18,700
Peak Demand Reduction (kW)		4,053	6,939	8,771	10,603	12,085	11,466	12,015	13,146	14,278 39,230,895	43,425,065	46,675,509	49,925,952	49,925,952	49,925,952	49,925,952	49,925,952	49,925,952	49,925,952	49,925,952	49,925,952
Energy Savings (kWh)		16,193,843	26,133,247	32,203,749	38,274,251	42,468,421	35,404,600	34,595,219	36,913,057	29,220,693	43,423,003	40,075,509	49,723,932	49,723,932	47,723,732	49,923,932	47,711,731	47,723,732	17,743,702	13,743,754	,
Bates		• 2 22	*2.00	***	5 0.00	****	*0.00	•0.00	\$0.00	PO (V)	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
Demand (\$/kW)		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00		\$0.00	\$0.2394	\$0.2446	\$0.2500	\$0.2555	\$0.2611	\$0.2669	\$0.2728	\$0.2788	\$0.2849	\$0.2912	\$0.2976
Energy (\$/kWh)		\$0.1968	\$0.2011	\$0.2056	\$0.2101	\$0.2147	\$0.2194	\$0.2242	\$0.2292	\$0.2342	\$0.2394	\$0.2440	\$0.2300	\$ 0.2333	\$0.2511	40.2009	40.2720	•	\$ 11.221		•
Pro- 1000000 011 010 100000		2006	2007	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS:	. ATOST																				
Avoided Costs (Utility, Ratepay Demand	NPY	\$730,906	\$1,255,514	\$1,589,979	\$1,922,642	\$0	50	\$0	\$0	\$0	\$24,116,648	\$29,353,361	\$28,754,076	\$26,422,086	\$24,393,850	\$22,574,172	\$21,501,588	\$20,802,314	\$20,133,950	-\$7,693,667	-\$13,914,238
Energy		\$1,775,110	\$2,800,556	\$3,290,987	\$4,091,056	\$4,200,283	\$3,554,883	\$3,599,311	\$3.827.375	\$4,270,663	-\$6,064,759	-\$6,192,308	-\$5,938,859	-\$5,759,227	-\$5,442,523	-\$5,220,384	-\$4,993,633	-\$5,457,072	-\$5,562,260	\$6,879,537	\$7,212,730
Total	\$102,446,532		\$4,056,070	\$4,880,966	\$6,013,698	\$4,200,283	\$3,554,883	\$3,599,311	\$3,827,375	\$4,270,663	\$18,051,888	\$23,161,053	\$22,815,217	\$20,662,859	\$18,951,326	\$17,353,789	\$16,507,955		\$14,571,690	-\$814,129	-\$6,701,509
Avoided Costs (Total Resource																					
Demand	L	\$730,906	\$1,255,514	\$1,589,979	\$1,922,642	\$0	\$0	\$0	\$0	\$0	\$24,116,648	\$29,353,361	\$28,754,076	\$26,422,086	\$24,393,850	\$22,574,172	\$21,501,588	\$20,802,314	\$20,133,950	-\$7,693,667	-\$13,914,238
Energy		\$1,775,110	\$2.800.556	\$3,290,987	\$4.091.056	\$4,200,283	\$3,554,883	\$3,599,311	\$3,827,375	\$4,270,663	-\$6,064,759	-\$6,192,308	\$5,938,859	-\$5,759,227	-\$5,442,523	-\$5,220,384	-\$4,993,633	-\$5,457,072	-\$5,562,260	\$6,879,537	\$7,212,730
Total	\$102,446,532	\$2,506,016	\$4,056,070	\$4,880,966	\$6,013,698	\$4,200,283	\$3,554,883	\$3,599,311	\$3,827,375	\$4,270,663	\$18,051,888	\$23,161,053	\$22,815,217	\$20,662,859	\$18,951,326	\$17,353,789	\$16,507,955	\$15,345,241	\$14,571,690	-\$814,129	-\$6,701,509
Avoided Costs (Participant)																					
Demand		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$()	\$0
Energy		\$3,186,948	\$5,256,169	\$6,619,624	\$8,040,526	\$9,117,899	\$7,768,537	\$7,757,942	\$8,459,825	\$9,188,836	\$10,394,980	\$11,418,870	\$12,482,780	\$12,757,401	\$13,038,064	\$13,324,901	\$13,618,049				
Total	\$111,863,306	\$3,186,948	\$5,256,169	\$6,619,624	\$8,040,526	\$9,117,899	\$7,768,537	\$7,757,942	\$8,459,825	\$9,188,836	\$10,394,980	\$11,418,870	\$12,482,780	\$12,757,401	\$13,038,064	\$13,324,901	\$13,618,049	\$13,917,646	\$14,223,834	\$14,536,759	\$1-1,856,567
COST CALCULATIONS:																					
Cost Inputs:																					
Implementation		\$1,033,612	\$1,061,865	\$991,073	\$1,022,696	\$1,041,502	\$1,090,333	\$1,129,850	\$1,170,826	\$1,213,315	\$1,257,376	\$1,303,066	\$1,350,446	\$1,399,579	\$1,450,531	\$1,503,371	\$1,558,168	\$1,614,997	\$1,673,932	\$1,735,053	\$1,798,442
Incentives		\$1,231,250	\$981,250	\$856,250	\$856,250	\$781,250	\$798,438	\$816,003	\$833,955	\$8,52,302	\$871,053	\$890,216	\$909,801	\$929,816	\$950,272	\$971,178	\$992,544	\$1,014,380	\$1,036,697	\$1,059,504	\$1,082,813
Participant		\$3,182,513	\$2,753,026	\$2,558,347	\$2,614,631	\$2,512,192	\$2,567,461	\$2,623,945	\$2,681,671	\$2,740,668	\$2,800,963	\$2,862,584	\$2,925,561	\$2,989,923	\$3,055,702	\$3,122,927	\$3,191,631	\$3,261,847	\$3,333,608	\$3,406,947	\$3,481,900
	NPY																			en 507 370	60 774 740
Total Participant Costs	\$21,678,462	\$2,135,951	\$1,918,964	\$1,830,534	\$1,886,818	\$1,848,130	\$1,888,789	·· \$1,930,342	\$1,972,810	\$2,016,211	\$2,060,568	\$2,105,901	\$2,152,230	\$2,199,579	\$2,247,970	\$2,297,426	\$2,347,969	\$2,399,624	\$2,452,416	\$2,506,369	\$2,561,509
Total RIM Costs	\$134,457,721	\$5,451,810	\$7,299,284	\$8,466,947	\$9,919,472	\$10,940,651	\$9,657,308	\$9,703,795	\$10,464,606	\$11,254,453	\$12,523,408	\$13,612,151	\$14,743,026	\$15,086,796	\$15,438,867	\$15,799,450	\$16,168,761	\$16,547,023	\$16,934,463	\$17,331,316	\$17,737,823
Total Utility Costs	\$22,594,415	\$2,264,862	\$2,043,115	\$1,847,323	\$1,878,946	\$1,822,752	\$1,888,771	\$1,945,853	\$2,004,781	\$2,065,618	\$2,128,429	\$2,193,282	\$2,260,246	\$2,329,395	\$2,400,804	\$2,474,549	\$2,550,713	\$2,629,377	\$2,710,629	\$2,794,557	\$2,881,255
Total TRC Costs	\$42,807,877	\$4,216,125	\$3,814,891	\$3,549,420	\$3,637,326	\$3,553,694	\$3,657,794	\$3,753,794	\$3,852,497	\$3,953,984	\$4.058.339	\$4,165,650	\$4,276,007	\$4,389,502	\$4.506.233	\$4.626.298	\$4,749,800	\$4,876,844	\$5,007,540	\$5,142,001	\$5,280,343
AUDIT ARE LANGE	274,501,611	g-1,210,123	43,614,671	#2,349,420	#3,037,320	40,000,004	#5,037,194	43,133,174	42,032,491	#J,733,764	4-1,000,000	4-,100,000	100001	47,307,302	Change	¥4,020,290	¥1,.47,000	4-10-14-0-1	##\$00 (pa-40	4	10,000,00

Exhibit A Page 8 of 11

Intel TRC Costs	£01'095'99 \$	791,203,167	H-8,E82,H	€87,188, 2 \$	\$5,825,122	262, 476 ,292	£4,151,0 \$	† 16'56 2 '9 \$	\$6,460,551	\$26,150,03	081,808,0\$	991'686'9\$	TE6,2T1,T 2	+51,766,1 2	180,262,7\$	880,837,7\$	056'916'1\$	158,191,8\$	TT0,514.8 \$	525,U+3,8 \$	989'+48'8\$
Total Daility Coata	680'961'68\$	799,121,E \$	112,041,6\$	\$3,705,6\$	6+1'+97'£\$	TE0,+SE,E \$	\$36,624,6\$	166,822,6\$	\$3'632,143	262,147,E \$	£26,£28,£ \$	9t7'0L6'E\$	\$62,060,4\$	T25,415,4 2	9/1,246,4	617'715'+\$	878,018,4 2	125,157,4	656'968'1\$	251,740,2\$	\$5,202,262
Total RIM Conta	028,855,801	170,233,6\$	867,025,4\$	\$4,900,883	\$65,178,28	60,272,400	190'660'1\$	8£8,0£8,7\$	\$t7,888,8	928,622,0\$	021,686,018	\$11,269,894	£11,191,133	\$16'Lt1'E1 \$	195'1+1'+1\$	\$90,£71 , 21 \$	868,446,218	\$15,926,232	+16,715,81\$	696'81 <i>L</i> '91 \$	648,051,71\$
Total Participant Costs	YAN 21,957,349	018,974,18	\$1,536,003	172,572,571	\$ \$566,2 \$	\$3,048,025	\$3,115,082	\$19 '681'6\$	\$3,253,653	££2,22£,233	685,896,5 \$	e21,e74,e \$	295'6 1 5'E \$	€€9,720,€€	₹9†'L0 L 'E \$	\$3,789,025	₽85,278,6 ₹	9L5'L56'E \$	er9'710'1 \$	\$79,651,4\$	\$4,224,565
esvitroon! Insqioins!	24414	000'074,1 2		\$1,470,000		859'611' +\$	\$1,502,340 \$4,210,288	+16'20E'+\$	872,792,1 2	\$26,494,4 \$	676,868,1 \$ 002,662,4 \$	0£0,270,1 \$ 025,460,4 \$	188,117,1 2 452,707,4 2	690'E06' +\$	ZE0,887,1 2 7E0,010,2 2	871,121,2 \$	172,738,1 2 518,652,2 2	886'81£'5\$	81-9'056'1 \$	266,882,8 \$	\$18'60L'\$\$
Cost Inputs: Implementation		799,189,1 2	115,070,18	S22, TET, 18	6+1'+61'1\$	TE3,428,1 \$	\$85,129,1\$	000,199,18	£70,230,2 \$	\$2,137,600	086'+12'2\$	917'567'7\$	+1+'8/E'Z\$	\$89'+9+'7\$	\$5,554,144	95,646,910	\$2,743,107	\$2,842,863	116,846,51	685,680,6 8	1+8+91,6\$
COST CALCULATIONS:																					
t:nengy Total	192'0+1'29\$	+0+'0+S\$	185'HO1'1\$		9++'106'7\$	£2,947,762	961,810,68	7++,015,+¥	209,450,68	₽€5,887,2 \$	761,922,19 3	81-9'66Z'L\$	868,001,8\$	8+7,559,8\$	58E,007,01				\$11,420,555		T82,829,112
Avoided Costs (Varticipant) Demand		+0+'0+5\$ 0\$	0 \$ 782,401,1 \$	0\$	9++,70€, <u>5</u> \$	0 \$ 297,746,5 \$	0\$ 9E1,818,E\$	0 \$ 2++'016'+ \$	\$5,034£0,2 \$	0 \$ 165,887,2 \$	0 \$ 261,652,6 \$	0 \$ 819'667'1 \$	0 \$ 8£8,001,8 \$	847,659,8 \$ 0 \$	0 \$ 58£,667,6 \$	984,898,01 \$	0 \$ 0\$	0\$	\$11,420,555 \$0	08,170,112	98 785,826,112
IstoT	629'888'86\$	+58'+I+ \$	100°L18\$	881,281,18	ZS6'1E9'1 \$	926,725,13	987'+59'1\$	628'666'1\$	£47,775 <u>,5</u> 2	715,092,2 \$	91-9*16/,5\$	690'6EL'L\$	/Z†'†19'/ \$	\Z0'Z\$E'\\$	487,E81,7 2	£99'956'9 \$	ZE0'609'9 \$	165,198,2 \$	890'L/+'S \$	ocalismits.	
Vgran-1 fero.T	069 888 813	200,1062	862,882 \$	981 291 12	650,471,12	329,72E,13	982,429,13	958 000 12	£7/1/273	TIE 009 C\$	0te,008,e 2 -	905,859,52 900,057,72	880,1-28,52	690'EE0't\$-	165,060,4-2-	EEE,191,42-	ZLT'600't\$-	272,185,44-		861,427,18	682,080,18-
bramoCl		ZS8'E11\$	994,822 \$	866,646		0\$	0\$	0\$	01	04	\$86'009'6\$		212,834,112			761,841,11 2	105,816,012	691,672,018	2E0,234,42	969,523,696	122,197,221
Avoided Costs (Total Resource)		258 £113	996 BCC#	011 1118	FIG Tal 9			1/2	(A)	· · ·	280 (47) (3	525 209 11 3	212 8VF 113	900 571 113	921 726 113	701 811 113	LOS BENOTS	691 675 018	000 110 03	L61*66L'E\$-	112,178,82-
Total Total	629,888,8£\$	\$301,002	#00'L18\$	881,281,18	296'1£9'1\$	926'156'1\$	\$1,654,286	6E8'666'1\$	\$2,777,743	T1E,090,22	045,608,5 2 -	690'6EL'L\$	724,418,72 724,418,72	750,546,7 \$	105,000,4 2 -	£99'956'9 \$	Z£0'609'9\$	572,186,4 2	890'LZ†'S\$	\$61,427,198	122,167,28 682,080,18-
Avoided Costs (Utility, Ratepay Demand	Xan	\$113,852	\$528,466	856,6462	£16,724 2	0\$	0 \$	0\$	0\$	0\$	586'009'6\$				\$11,274,375	701,841,11 2	105,818,012	991,ETS,01 2	660,640,08	L6t'66L'E\$-	112,178,82-
BENELLI CVICOLVIIONS:		9007	2002	2008	2002	TOTOZ	2011	2012	2013	2014	5102	5076	2102	2018	5073	0202	1202	2202	5707	2024	707
(II) /P																					
Demand (\$/kW)		00.0 2 8801.0 2	00:0\$	9502.0 \$	00.0 2	00.02 7+12.02	\$0.0 \$	00:0 \$	\$0.00 \$0.00	00.0 2 Secs.0 2	00.0 \$	90:0 \$	\$0.00 \$0.2500	\$0.00 \$0.255	00:0 \$	00:0 \$ 699 Z:0\$	00.0 2 8272.0 2	00.0 2 887 2 .0 2	\$0°08 \$0°00	2162.0 \$	9462:0 \$ 90:0 \$
Raica																					
Energy Savings (kWh)		7,745,957	\$16,194,8	8,237,872	068,689,01	13,729,787	St.L'SLt'91	207,155,91	099,786,15	24,713,617	241,272,745	278,758,62	32,400,000	34,962,128	37,524,255	£8£,380,01-	£8£,380,0t	686,380,04	£85,580,04	E86,880,04	585,380,04
Cumulative Savings (Met System I Peak Demand Reduction (kW)	(Jazal)	169	£97,1	1,894	2,525	721,5	887,5	6It't	150,2	5,682	† /2'9	998'9	65+,T	150'8	£1-9,8	262,6	9,235	9235	9235	SET 6	22.6
		2005	Z00Z	8002	2002	TOTO	2011	2012	2013	2014	2015	2016	2102	2018	2019	2020	2021	2202	2023	2024	2025
	629,888,8£ \$	£01,032,33 2	(+L+'1L9'LZ \$)	82.0																	
	6Z9'888'8£\$	680,861,952	(091 LOES)	66.0																	
	629,888,8E \$	028,055,0013	(\$52,811,70\$)	76.0																	
realTrangioins(I	192'0+1'29\$	61E,720,16 2	\$11,681,26\$	2.10																	
	शतेत्रकर्ध	चळ	यवाज्या विस्तरक्षा	BAC Ratio																	

beockym nyme: besidenliyt ebeicienl ayleb hevling beockym nyme: besidenliyt ebeicienl avleb hove 3000 slymyka lob 5000 slymyka bob 5000 slymy

5°5% 8% (ensay) amitalial anuesaM

TABLE 6. RNC: DETAILED SUMMARY FOR 2006 START YEAR — 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: RESIDENTIAL NEW CONSTRUCTION PROGRAM

Discount Rate	80%
General Escalation Rate	2.2%
Measure Lifetime (years)	15

Participant Test Ratepayer Impact Measure Test	Benefits \$59,226,591 \$63,052,341	Costs \$17,036,425 \$86,929,026	Net Benefits \$42,190,166 (\$23,876,686)	B/C Ratio 3.48 0.73																	
Unlity Cost Test Total Resource Cost Test	\$63,052,341 \$63,052,341	\$27,702,435 \$42,441,563	\$35,349,906 \$20,610,777	2.28 1.49																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Savings (Net System	Level)			KUUS	MVV2.				avait.	MALE.	MV44	MVAV	MAN	avau.		4000	arana.	NAME.			
Peak Demand Reduction (kW)		787	2,002	2,996	3,989	4,982	5,939	6,896	7,853	8,810	9,754	10,697	11,640	12,584	13,527	14,471	14,471	14,471	14,471	14,471	14,471
Energy Savings (kWh)		2,542,113	5,893,331	8,267,217	10,641,102	13,014,988	15,203,228	17,391,467	19,579,706	21,767,945	23,895,593	26,023,240	28,150,887	30,278,534	32,406,181	34,533,828	34,533,828	34,533,828	34,533,828	34,533,828	34,533,828
Rates																					
Demand (\$/kW)		\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.(x)	\$0.00	\$0.00
Energy (\$/kWh)		\$0.1968	\$0.2011	\$0.2056	\$0.2101	\$0.2147	\$0.2194	\$0.2242	\$0.2292	\$0.2342	\$0.2394	\$0.2446	\$0.2500	\$0.2555	\$0.2611	\$0.2669	\$0.2728	\$0.2788	\$0.2849	\$0.2912	\$0.2976
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS:																					
Avoided Costs (Utility, Ratepay Demand	NPY	\$141,878	\$362,252	\$543.007	\$723,290	\$0	\$0	\$0	\$()	\$0	\$14,925,067	\$18,223,221	\$17,898,485	\$17,779,852	\$17,645,653	\$17.468.196	\$16,638,216	\$16,097,108	\$15,579,919	- \$ 5,953,462	-\$10,767,023
Energy		\$278,657	\$631,556	\$844.849	\$1,137,406	\$1,287,230	\$1,526,516	\$1,809,420	\$2,030,145	\$2,369,652	-\$3,337,266	-\$3,452,430	-\$3,348,642	-\$3,492,792	-\$3,532,660	-\$3,610,944	-\$3,454,101	-\$3,774,662	-\$3,847,420	\$4,758,582	\$4,989,052
Total	\$63,052,341	\$420,536	\$993,807	\$1,387,856	\$1,860,695	\$1,287,230	\$1,526,516	\$1,809,420	\$2,030,145	\$2,369,652	\$11,587,800	\$14,770,791	\$14,549,843	\$14,287,060	\$14,112,993	\$13,857,251	\$13,184,115	\$12,322,446	\$11,732,499	-\$1,194,879	-\$5,777,971
Avoided Costs (Total Resource)																					
Demand		\$141,878	\$362,252	\$543,007	\$723,290	\$0	\$0	\$0	\$0	\$0	\$14,925,067	\$18,223,221	\$17,898,485	\$17,779,852	\$17,645,653	\$17,468,196	\$16,638,216	\$16,097,108	\$15,579,919	-\$5,953,462	-\$10,767,023
Energy		\$278,657	\$631,556	\$844,849	\$1,137,406	\$1,287,230	\$1,526,516	\$1,809,420	\$2,030,145	\$2,369,652	-\$3,337,266	-\$3,452,430	-\$3,348,642	-\$3,492,792	-\$3,532,660	-\$3,610,944	-\$3,454,101	-\$3,774,662	-\$3,847,420	\$4,758,582	\$4,989,052
Total	\$63,052,341	\$420,536	\$993,807	\$1,387,856	\$1,860,695	\$1,287,230	\$1,526,516	\$1,809,420	\$2,030,145	\$2,369,652	\$11,587,800	\$14,770,791	\$14,549,843	\$14,287,060	\$14,112,993	\$13,857,251	\$13,184,115	\$12,322,446	\$11,732,499	-\$1,194,879	-\$5,777,971
Avoided Costs (Participant)																					
Demand		\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
Energy Total	\$59,226,591	\$500,288 \$500,288	\$1,185,323 \$1,185,323	\$1,699,363 \$1,699,363		\$2,794,296 \$2,794,296	\$3,335,918 \$3,335,918	\$3,900,019 \$3,900,019	\$4,487,325 \$4,487,325	\$5,098,585 \$5,098,585	\$5,720,065 \$5,720,065	\$6,366,422 \$6,366,422	\$7,038,450 \$7,038,450	\$7,736,966	\$8,462,810	\$9,216,847	\$9,419,617 \$9,419,617	\$9,626,849 \$9,626,849	\$9,838,640 \$9,838,640	\$10,055,090 \$10,055,090	\$10,276,302 \$10,276,302
100m	\$39,220,391	\$300,288	\$1,163,323	\$1,000,000	\$4,433,447	\$2,794,290	\$3,333,918	\$3,900,019	₹4,487,323	\$3,098,383	\$5,720,065	\$6,300,422	¥7,036,+30	\$7,736,966	\$8,462,810	\$9,216,847	\$9,419,617	\$9,020,849	\$7,836,040	\$10,023,000	\$10,270,302
COST CALCULATIONS:																					
Cost Inputs:								,													
Implementation		\$1,016,038	\$1,044,216	\$1,010,525		\$1,081,170	\$1,124,214	\$1,168,863	\$1,215,176	\$1,263,213	\$1,313,039	\$1,364,717	\$1,418,317	\$1,473,907	\$1,531,562	\$1,591,356	\$1,647,651	\$1,705,994	\$1,766,459	\$1,829,126	\$1,894,077
Incentives		\$1,252,000	\$1,459,893	\$1,039,893		\$1,099,893	\$1,154,750	\$1,211,489	\$1,270,166	\$1,330,838	\$1,393,565	\$1,458,408	\$1,525,429	\$1,594,693	\$1,666,267	\$1,740,218	\$1,778,503	\$1,817,630	\$1,857,618	\$1,898,486	\$1,940,252
Participant	NPY	\$2,211,830	\$2,756,570	\$2,448,282	¥2,502,144	\$2,557,191	\$2,613,449	\$2,670,945	\$2,729,706	\$2,789,760	\$2,851,134	\$2,913,859	\$2,977,964	\$3,043,479	\$3,110,436	\$3,178,865	\$3,248,801	\$3,320,274	\$3,393,320	\$3,467,973	\$3,544,269
Total Participant Costs	\$17,036,425	\$1,158,898	\$1,528,800	\$1,573,732	\$1,602,364	\$1,632,181	\$1,642,304	\$1,652,083	\$1,661,496	\$1,670,525	\$1,679,146	\$1,687,338	\$1,695,078	\$1,702,342	\$1,709,105	\$1,715,342	\$1,753,079	\$1,791,647	\$1,831,063	\$1,871,347	\$1,912,516
Total RIM Costs	\$86,929,026	\$2,768,326	\$3,689,432	\$3,749,781	\$4,350,518	\$4,975,359	\$5,614,882	\$6,280,371	\$6,972,667	\$7,692,637	\$8,426,668	\$9,189,547	\$9,982,196	\$10,805,567	\$11,660,639	\$12,548,421	\$12,845,772	\$13,150,473	\$13,462,717	\$13,782,702	\$14,110,631
Total Utility Costs	\$27,702,435	\$2,268,038	\$2,504,108	\$2.050.418	\$2,115,071	\$2,181,063	\$2,278,964	\$2,380,352	\$2,485,342	\$2,594,051	\$2,706,604	\$2,823,125	\$2,943,746	\$3,068,601	\$3,197,829	\$3,331,575	\$3,426,155	\$3,523,624	\$3,624,077	\$3,727,612	\$3,834,329
									, ,												
Total TRC Costs	\$42,441,563	\$3,227,868	\$3,800,785	\$3,458,807	\$3,547,322	\$3,638,361	\$3,737,663	\$3,839,808	\$3,944,882	\$4,052,973	\$4,164,173	\$4,278,576	\$4,396,281	\$4,517,387	\$4,641,998	\$4,770,222	\$4,896,452	\$5,026,268	\$5,159,779	\$5,297,100	\$5,438,345

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HECO Energy Efficiency Docket CE Analysis DOCKET (OLD AC w ROC) (11-03-06).xls

TABLE 7, RLI: DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: RESIDENTIAL LOW INCOME

PROGRAM INVITES RESIDENT PROGRAM INVITES RESID

CE Analysis DOCKET (OLD AC w ROC) (11-03-06).xls

Paricipant Test Ratepayer Impact Measure Test Utility Cost Test Total Resource Cost Test	Benefits \$54,065,133 \$31,908,021 \$31,908,021 \$31,908,021	Costs \$0 \$67,294,197 \$13,229,064 \$6,437,703	Net Benefits F \$54,065,133 (\$35,386,176) \$18,678,957 \$25,470,318	B/C/Ratio N.A 0.47 2.41 4.96																	
Cumilative Savince (Net Sustem Level)	ran f even	2002	2007	2008	2002	2010	707	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Peak Demand Reduction (kW) Energy Savings (kWh)		591 2,633,290	1,182 5,266,579	1,773 2,364 7,899,869 10,533,159		2,954 13,166,449	3,381 14,916,759 1	3,807 16,667,069	4,233	4,659	5,085	5,511	5,937 25,418,619	6,363	6,789	7,215	7,215	7,215	7,215	7,215	7,215
Rates Demund (\$/kW) Energy (\$/kWh)		\$0.00 \$0.1968	\$0.00 \$0.2011	\$0.00 \$0.2056	\$0.00 \$0.2101	\$0.00	\$0.00	\$0.00 \$0.2242	\$0.00	\$0.00 \$0.2342	\$0.00	\$0.00	\$0.00 \$0.2500	\$0.00 \$0.2555	\$0.00 \$0.2611	\$0.00	\$0.00	\$0.00	\$0.00 \$0.2849	\$0.00	\$0.00
BENEFIT CALCULATIONS:	,00	2005	2007	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	707	2022	2023	2024	2025
Avoided Costs (Utility, Ratepay Demand Energy Total	831,908,021	\$106,555 \$288,652 \$395,207	\$213,824 \$564,390 \$778,214	\$321,334 \$428,565 \$807,309 \$1,125,868 \$1,128,642 \$1,554,433	- 1	~ ~	\$0 \$1,497,753 \$1,497,753	\$0 \$1,734,053 \$1,734,053	\$0 \$1,909,628 \$1,909,628	\$0 1 \$2,195,449 -1 \$2,195,449 1	\$7,781,006 \$3,061,075 \$4,719,931	\$9,388,476 \$3,140,007 \$6,248,468	\$9,129,014 \$3,023,630 \$6,105,385	\$8,990,684 \$3,134,082 \$5,856,602	\$8,856,362 \$3,152,541 \$5,703,820	\$8,710,081 53,206,885 15,503,196	\$8,296,233 \$3,067,593 \$5,228,640	\$8,026,423 -\$3,352,283 \$4,674,139	\$7,768,539 \$3,416,900 \$4,351,639	\$2,968,546 - \$4,226,105 \$1,257,559	\$5,368,708 \$4,430,785 -\$937,923
Avoided Costs (Total Resource) Demand Energy Total	£3.908,021	\$106,555 \$288,652 \$395,207	\$213,824 \$564,390 \$778,214	\$321,334 \$428,565 \$807,309 \$1,125,868 \$1,128,642 \$1,554,433		1	\$ 1,497,753 \$ 1,497,753	\$0 \$1,734,053 \$1,734,053	\$0 \$1,909,628 \$1,909,628	\$0 1 \$2,195,449 1	57,781,006 13,061,075	\$9,388,476 \$3,140,007 \$6,248,468	\$9,129,014 \$3,023,630 \$6,105,385	\$8,990,684 \$3,134,082 \$5,856,602	\$8,856,362 -\$3,152,541 \$5,703,820	\$8,710,081 \$3,206,885 \$5,503,196	\$8,296,233 -\$3,067,593 \$5,228,640	\$8,026,423 -\$3,352,283 \$4,674,139	\$7,768,539 \$3,416,900 \$4,351,639	\$2,968,546 - \$4,226,105 \$1,257,559	\$5,368,708 \$4,430,785 -\$937,923
Avoided Conta (Participant) Demand Energy Total	\$54,065,133	\$0 \$518,231 \$518,231	\$0 \$0 \$1,059,265 \$1,623,853 \$2,212,771 \$1,059,265 \$1,623,853 \$2,212,771	\$0 \$1,623,853 \$ \$1,623,853 \$		\$0 \$2,826,815 \$2,826,815 \$	\$0 53.273,061 \$ 53,273,061 \$	\$0 \$3,737,573 \$4,737,573	\$0 \$4,220,940 \$4,220,940	\$0 14,723,766 14,723,766	\$0 \$5,246,674 \$5,246,674	\$0 \$5,790,303	\$0 \$6,355,312 \$6,355,312	\$0,942,380 \$6,942,380	\$0 \$7,552,202 \$7,552,202	\$0 \$8.185,496 \$8,185,496	\$0 58,365,577 775,88	88,549,620 028,945,8 8	\$0 \$8,737,712 \$8,737,712	\$0 \$8,929,941 \$8,929,9 41	\$0,126,400 \$9,126,400
COST CALCULATIONS:																					
Coat Innus Implementation Incentives Participant	NDIN	\$464,975 \$589,000 \$0	\$488,027 \$589,000 \$0	\$507,177 \$589,000 \$0.	\$522,493 \$589,000 \$0	\$539,490 \$589,000 \$0	5558,577 8601,958 90	\$578,358 \$615,201 \$0	\$598,859 \$628,735 \$0	\$620,107 \$642,568 \$0	\$642,128 \$656,704 \$0	\$664,953 \$671,152 \$0	\$688,611 \$685,917 \$0	\$713,132 \$701,007 \$0	\$738.548 \$716,429	\$764,894 \$732,191 \$0	\$792,202 \$748,299	\$820,510 \$764,762 \$0	\$849,854 \$781,586 \$0	\$880,273 \$798,781	\$911,806 \$816,354 \$0
Total Participant Costs	2	2	O \$	O \$	2	2	2	2	0\$	S	2	S.	3	Э	2	2	ವಿ	3	0\$	2	3
Total RIM Costs	\$67,294,197	\$1,572,206	\$2,136,292	\$2,720,030 \$3,324,263		\$3,955,304 \$4	,433,595	\$4,931,132 \$1	\$5,448,534	\$ 2,986,440	\$6,545,506	\$7,126,408	\$7,729,840	\$8,356,518	\$ 9,007,180	\$9,682,581	\$ 620,906,03	\$10,134,892 \$1	\$ 251,69,152	\$10,608,995	\$10,854,560
Total Utility Costs	\$13,229,064	\$1,053,975	\$ 1,077,027	\$1,096,177	\$1,111,493 \$	\$1,128,490	\$1,160,535	\$1,193,559	\$1,227,594	\$1,262,674	\$1,298,833	\$1,336,105	\$1,374,528	\$1,414,139	\$1,454,978	\$ 1,497,084	\$1,540,501	\$1,585,272	\$1,631,440	1,679,054	\$1,728,160
Total TRC Conta	\$6,437,703	\$464,975	\$488,027 \$507,177		\$522,493	\$539,490	\$558,577	\$578,358	\$598,859	\$620,107	\$642,128	\$664,953	\$688,611	\$713,132	\$738,548	\$764,894	\$792,202	\$820,510	\$849,854	\$880,273	\$911,806

Avoided Capacity and Energy Costs SCENARIO: Used year-by-year estimates for 20-year forecast horizon (2006-2025), then the escalated levelized value for years beyond.

	2000	<u> 2007</u>	2000	4002	4V.IV	4V.I.I	2012	<u> 2013</u>	2014	4013	2010	2017	2010	2019	2020	4041	4044	4043	2024	4042	2020	ener.	
Electric Avoided Cost Demand (\$/kW)	\$ 180	\$181	\$ 181	\$181	\$ 0	\$ 0	\$ 0	\$ 0	\$ 0					\$1,304		, - ,	,		-\$411	-\$744	\$662		
Average Energy-(\$/kWh)	\$0.110	\$ 0.107	\$0.102	\$ 0.107	\$ 0.099	\$ 0.100	\$0.104	\$ 0.104	\$0.109	-\$ 0.140	-\$0.133	-\$0.119	-\$0.115	-\$ 0.109	-\$0.105	-\$0.100	-\$0.109	-\$0.111	\$0.138	\$ 0.144	-\$0.006	-\$0.006	
	2028	2029	2030	2031	2032	2033	2034	2035	2036	2037	2038	2039	<u>2040</u>	2041	2042	2043	<u>2044</u>	2045	2046	2047	2048	2049	2050
Demand (\$/kW)	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$662	\$ 662	\$662	\$662	\$662	\$662	\$662	\$662	\$ 662	\$662	\$662
Average Energy-(\$/kWh)	200.006	\$0.006	\$ 0.004	e 0.004	20.006	\$0.006	\$0.006	\$0.006	\$0.006	\$0.006	\$0.006	\$ 0.006	200 00	200.00	80.006	\$0.006	200.00	-\$0.006	\$0.006	\$0.006	20.006	-\$ 0.006	200 02

Source: HECO System Planning estimates (DSM AC 2006A r2B.xls) (see below)

Data from DSM AC 2006A r2.xls

2015 2016 2017 2018 2020 Year-by-year Estimates Demand (\$/kW) 0 1638.8 1824.5 1646.8 1513.2 1397.1 1292.8 1231.4 1191.4 1153.1 -440.6 -796.9 193.1343 193.78 194.14 194.2 Average Energy (\$/MWh) 117.398 114.77 109.45 114.48 105.92 107.54 111.43 111.05 116.59 -149.6 -142.1 -127.4 -123.5 -116.8 -112 -107.1 -117.1 -119.3 147.58 154.72

Average Energy (\$/kWh) 0.117398 0.1148 0.1094 0.1145 0.1059 0.1075 0.1114 0.111 0.1166 -0.15 -0.142 -0.127 -0.124 -0.117 -0.112 -0.107 -0.117 -0.119 0.1476 0.1547

Avoided Cost (Levelized) -- Costs held constant from 2026 to 2050.

Demand (\$/kW) \$709 Average Energy (\$/kWh) -\$0.0068

Adjustment of Avoided costs to reflect Net-to-System: Based on email from Alan Hee (8/9/06):

Please multiply the avoided costs from Exhibit 12 by (1-0.1117)+(1-0.04864) = 0.93372 so that they can be multiplied times the gross generation levels of kw and kwh

Adjustment Factor:

0.9337

Energy Efficiency DSM Program Avoided Costs and Alternative Avoided Cost Allocation Calculation

The cost-effectiveness of the Energy Efficiency DSM programs was assessed by comparing the costs avoided as a result of the implementation of the programs against the program implementation costs. The avoided costs were estimated by calculating the difference in costs (capacity and energy) between a "Future EE DSM" (or "base") resource plan, which included the DSM programs, and a "No Future EE DSM" (or "alternate") resource plan, which excluded the DSM programs. See revised Exhibit 12 at 1-3.

As explained in Exhibit 12, the avoided costs were estimated from base and alternate plans under a "Scenario A," which included the specific assumptions described in the Exhibit. The avoided costs are sensitive to the assumptions, and a change in the assumptions would produce different avoided cost results. The assumptions used in Scenario A, and some of their associated uncertainties, were as provided in HECO's Opening Brief at pages 58-59.

An issue was raised at the panel hearings by RMI with respect to the allocation of the avoided cost benefits to the energy efficiency programs. The avoided costs benefits arise primarily out of the assumed deferral of a 180 MW coal unit from 2015 to 2024. This results in high avoided capacity costs during those years, but negative avoided energy costs (because the coal unit would have displaced higher cost oil-fired kWh had it not been deferred).

To address this concern, HECO committed to do an alternative calculation, in which the avoided capacity costs were limited to the value of a proxy combustion turbine ("Proxy CT"). Tr. (8/29) at 475 (Williams). In such a calculation, the difference between the avoided capacity costs for the coal unit and the Proxy CT are added to the avoided energy costs, so that total avoided costs remain the same. The calculation and explanation of the alternative avoided cost allocation calculation follows.

In Exhibit 12, submitted in response to CA-IR-9 (revised on August 24, 2006), HECO provided energy and capacity costs avoided by its portfolio of proposed energy efficiency programs. As indicated in Exhibit 12, the avoided costs were based on the deferral of a coal unit and were used to develop DSM program cost-effectiveness test results measured by benefit/cost ratios. This is the same method used throughout the implementation of the DSM programs since 1996.

Rocky Mountain Institute ("RMI") accepted the calculated net present value ("NPV") for the entire portfolio of energy efficiency programs, but raised questions about the appropriateness of the benefit/cost ratio results for individual DSM programs. Specifically, RMI disagreed with the method HECO used to allocate the benefits of energy and demand savings to each program.

Following discussion with RMI, HECO developed an alternative method to explore a different allocation of energy and demand savings benefits to the individual energy efficiency DSM programs. The alternative avoided cost calculation, attached, seeks to preserve the overall energy plus capacity NPV benefits at the portfolio level, but reallocate the benefits between capacity and energy. In other words, this alternative calculation is a different method of allocating the costs avoided by the portfolio of energy efficiency programs, but is not a different avoided cost.

In the alternative calculation of avoided capacity costs, HECO determined the deferral benefits of a Proxy CT unit instead of a coal plant (Attachment 1). The resulting Proxy CT avoided capacity costs are shown in Attachment 3. In order to preserve the overall energy plus capacity net present value benefits from the coal plant, the alternative avoided energy costs were derived as follows:

- The difference between the annual avoided capacity and fixed O&M costs for the Proxy CT unit and the annual avoided capacity and fixed O&M costs for the coal plant was calculated.
- This difference was added to the annual avoided energy costs for the coal plant (as shown in Attachment 4).

Thus, the sum of the 2006 through 2025 annual avoided capacity and fixed O&M costs from the Proxy CT plus the alternative annual avoided energy costs equals the sum of the 2006 through 2025 annual avoided capacity and energy costs for the coal plant. However, now the annual allocation of capacity and energy avoided costs increases the value of the energy savings benefits of the DSM programs.

The resulting alternative avoided capacity and energy costs were used to derive alternative benefit/cost ratios for the individual proposed energy efficiency DSM programs, as shown in the alternative Exhibit 10 (pages 7-17 of this Exhibit). The alternative Exhibit 10 used the levelized rates for 2006-2025 for the purposes of estimating end effects.

Note: the resource plan supported by the Company is the one that includes the coal plant. The use of the Proxy CT was simply to explore the impact of different avoided costs on the cost-effectiveness of the proposed DSM programs.

20-year Future DSM programs 2006 HECO Fuel Price Forecast ATTACHMENT 1 Alternative DSM Avoided Cost

For A	Iternative Avoided Cos	sts using Proxy CT
Year	With Future EE DSM	No Future EE DSM
2005	Substation DG (15 MW)	Substation DG (15 MW)
	Substation DG (15 MW)	Substation DG (15 MW)
2006	Future DSM: CIEE, CINC, CICR, REWH, RNC, E\$H, RLI, REWH	Virtual DG
2007	PV	PV (200 KM)
2008	(300 KW)	(300 KW)
2009	CIP CT 1 (113 MW) CIP CT 2 (113 MW) Wind (50 MW)	CIP CT 1 (113 MW) CIP CT 2 (113 MW) Wind (50 MW)
2010	Substation DG retired (30 MW)	Substation DG retired (30 MW) Virtual DG retired
2011		
2012		
2013	Municipal Solid Waste (16 MW)	Municipal Solid Waste (16 M W)
2014		
2015	PV (300 KW)	Simple Cycle CT (113 MW) PV (300 KW)
2016	·	
2017		
2018		/
2019		
20 20	(300 KW)	PV (300 KW)
2021		
2022		
2023		
2024	Simple Cycle CT (113 MW)	Simple Cycle CT (113 MW)
2025	PV (300 KW)	P V (300 KW)

Notes:

- (1) Plans are based on April 2006 short-term forecast extended beyond 2010 using the February 2004 S&P forecast escalations, 2006 HECO fuel price forecast, and 2006 GDPIPD forecast
- (2) "With DSM" plan includes future 2006-2025 EE DSM, while the "No DSM" plan excludes these impacts. Both plans include 1) acquired 1996-2005 EE DSM (2005 acq LFA's 1/10/06) 2) acquired and future RDLC and CIDLC (LFA files received 1/12/06)
- (3) CIP CT 1 (113 MW) Simple Cycle Siemens CT at Campbell Industrial Park site CIP CT 2 (113 MW) - 2nd Simple Cycle Siemens CT at Campbell Industrial Park site Simple Cycle CT (113 MW) - Simple Cycle Simens CT
- (4) CHP impacts assumes market size equivalent to no utility participation scenario
- (5) No HECO unit or IPP retirements
- (6) Virtual DG, in "no DSM" plan installed at MW levels equal to EE DSM programs

DSM AC 2006E r1 (CT Proxy)ah.xls - Av. Costs - Formatted

Alternative DSM Avoided Cost 20 year DSM ATTACHMENT 2

April 2006/February 2004 Sales and Peak Forecast escalation; 2006 HECO Fuel Price Forecast

Avoided Energy Costs (\$/MWh)					lioi rs															
	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025

April 2006/February 2004 Sales and Peak Forecast escalation; 2006 HECO Fuel Price Forecast ATTACHMENT 3 Alternative DSM Avoided Cost 20 year DSM

	Rev	enue Requirer	ments				Coinc	ident Peak D	emand			
				-								
						Acceloland				Avoided		
			8.1 - 4 . 8 1 . 1 1		المادة المناسلة	Avoided			EE DSM	Capital and		PV cost using
1 1			Net Avoided	DCM Daviania	Avoided	Capital and Fixed O&M	Peak with	Peak w/o	Peak	Fixed O&M	ļ	levelized rate
		/- DCM	Revenue	DSM Revenue	Revenue	Costs	EE DSM	EE DSM	Reduction	Costs		dependent on
	with DSM	w/o DSM	Requirements	Requirements	Requirements	(\$000)	(MW)	(MW)	(MW)	(\$/kW-yr)		DSM peak
	(\$000)	(\$000)	(\$000)	(\$000)	(\$000)	, , ,	(18)	(19)	, ,	(φ/κνν-yr) (21)	PV Factor	
0000	(12)	(13)	(14)	(15) 17,281	(16) 5,245	(17) 1,533	1,311.2	1,319.2	(20) 7.9	193	1.0000	•
2006	1,027,308	1,015,272	(12,036)	i ' '	13,204	3,377	1,311.2	1,319.2	17.4	193	0.9210	
2007	1,024,770	1,020,302 1,021,199	(4,468)	17,672	19,732	4,949	1,329.5	1,347.0	25.5	194	0.8482	•
	1,018,958		2,241	17,492	27,281	6,482	1,357.4	1,390.8	33.4	194	0.7812	•
2009	1,062,971 1,060,076	1,072,266 1,065,016	9,294 4,940	18,397	23,337	0,402	1,368.2	1,409.2	41.0	154	0.7012	•
2010	1,060,076	1,087,129	8,204	18,987	27,191	_	1,300.2	1,424.7	47.4		0.6626	
2011	1,078,926	1,116,878	12,451	19,585	32,036	_	1,377.3	1,424.7	53.1		0.6103	•
	, ,	1,1164,839	•	·	36,111	_	1,396.9	1,456.3	59.4	_	0.5621	4,543.58
2013	1,148,930	1,104,639	15,910	20,202 20,838	42,219	_	1,406.3	1,472.4	66.0		0.5021	
2014	1,179,329 1,205,433	1,250,301	21,381 44,869	21,495	66,364	16,471	1,415.9	1,488.6	72.7	226	0.4767	·
2016	1,205,453	1,297,286	56,320	22,174	78,493	19.708	1,473.3	1,500.8	78.7	250	0.4391	4,700.73
2017	1,274,692	1,335,009	60,318	22,874	83,192	19,008	1,428.5	1,500.0	84.5	225	0.4044	•
2018	1,329,258	1,397,336	68,077	23,598	91,675	18,343	1,436.2	1,525.2	89.1	206	0.3724	•
2019	1,362,033	1,434,346	72,314	24,344	96,658	17,711	1,444.1	1,537.6	93.5	190	0.3430	•
2020	1,409,066	1,488,187	79,121	25,115	104,236	17,107	1,456.6	1,554.4	97.9	175	0.3159	
2021	1,459,920	1,542,320	82,400	25,859	108,259	16,526	1,465.2	1,564.7	99.5	166	0.2909	
2022	1,518,028	1,607,879	89,851	26,626	116,477	15,951	1,474.5	1,574.2	99.7	160	0.2680	
2023	1,565,256	1,656,508	91,252	27,417	118,670	15,374	1,484.2	1,583.9	99.7	154	0.2468	•
2024	1,652,089	1,746,786	94,698	28,234	122,932	14,797	1,493.8	1,593.5	99.7	148	0.2273	•
2025	1,718,640	1,816,995	98,355	29,077	127,432	14,223	1,503.6	1,603.4	99.8	143	0.2093	•

Total (06-25) NPV (06\$) 1,340,744 \$498,546

Notes:

201,563 \$75,626

Levelized (06-25)

75,626 **136** \$/kw-yr

General Notes:

Load forecast Apr 2006 (short). Sales/peaks beyond 2010 were derived using % increase from Feb 2004 Long Term Fcst 2006 HECO fuel price forecast

EE DSM based on .lfa files from Energy Services dated 3/22/06 and 3/23/06

LM based on the LFAs received on 3/22/06 and 3/28/06

CHP impacts assumes market size equivalent to no utility participation scenario (LFA received 12/14/05)

Assumes that HECO units and the IPP units do not retire

Assumed KPLP at 208 MW

2006 AOS EFORs reduced to 4-yr avg after 2nd CT

PS O&M 5 yr maint (2006 AOS); GPD LT maint

PV factor based on after-tax Cost of capital per 12/21/04 email from FAD

8.579%

12 Utility Cost from PRV System Cost Report for WDSM06CR0.sav.

- 13 Utility Cost from PRV System Cost Report for NDSM06CR0.sav.
- 14 Columns (13) minus column (12)
- 15 Diff in DSM cost for EE DSM prog (excl adjstmts for T&D avd costs) from LFA Utility Cost from PRV System Cost Reports
- 16 Column (14) plus Column (15)
- 17 Column (16) minus column (7) with the 9.751% revenue tax removed
- 18 Final Peak from GAF Loads and Res Detail Report WDSM06CR0.sav
- 19 Final Peak from GAF Loads and Res Detail Report NDSM06CR0.sav
- 20 Column (19) minus column (18)
- 21 Column (17) divided by column (20)

8/8/06

April 2006/February 2004 Sales and Peak Forecast escalation; 2006 HECO Fuel Price Forecast ATTACHMENT 4 Alternative DSM Avoided Cost 20 year DSM

Alternative Avoided Energy

		Alternative							
	Avoided Capital	Avoided Capital							
	& Fixed O&M	& Fixed O&M		Avoided	Alternative		Avoided		PV cost using
	Costs	Costs		Energy Cost	Avoided	EE DSM	Energy	•	levelized rate
	[Coal Unit]	[CT Proxy]		[Coal Unit]	Energy Cost	Energy	Costs		dependent on
	(\$000)	(\$000)	Difference	(\$000)	(\$000)	(GWh)	(\$/MWh)	PV Factor	DSM energy
	(a)	(b)	(c) = (a) - (b)	(d)	(e) = (c) + (d)	(f)	(g) = (e)/(f)		
2006	1,533	1,533		3,245	3,245	28	117	1.0000	2,988
2007	3,377	3,377	-	8,654	8,654	75	115	0.9210	7,506
2008	4,949	4,949	•	13,030	13,030	119		0.8482	10,915
2009	6,482	6,482	_	18,375	18,375	161	114	0.7812	13,554
2010		.,		21,263	21,263	201	106	0.7195	15,612
2011	-	•	**	24,775	24,775	230		0.6626	16,502
2012		-	-	29,190	29,190	262	111	0.6103	
2013	-	-	-	32,903	32,903	296	111	0.5621	18,001
2014	-	-	-	38,468	38,468	330	117	0.5176	18,462
2015	119,206	16,471	102,734	(54,628)	48,106	365	132	0.4767	18,821
2016	143,598	19,708	123,890	(56,444)	67,446	397	170	0.4391	18,854
2017	139,109	19,008	120,100	(54,107)	65,993	425	155	0.4044	18,564
2018	134,771	18,343	116,428	(55,654)	60,774	450	135	0.3724	18,135
2019	130,561	17,711	112,850	(55,444)	57,406	475	121	0.3430	17,608
2020	126,508	17,107	109,401	(55,915)	53,486	499	107	0.3159	17,050
2021	122,569	16,526	106,043	(55,186)		515	99	0.2909	16,202
2022	118,744	15,951	102,793	(60,983)		521	80	0.2680	15,089
2023	114,964	15,374	99,590	(62,197)		521	72	0.2468	13,905
2024	(43,944)		(58,741)		18,233	522	35	0.2273	12,814
2025	(79,499)		(93,722)		(12,970)		(25)	0.2093	11,809
				Total (06-25)	678,438				299,671

\$299,671

NPV (06\$)

Levelized (06-25) 108.09 \$/MWH

Cost Effectiveness Results -- 20-YEAR PLANNING HORIZON (2006-2025)

	A SECTION ASSESSMENT	B/C Ratio	
Program	TRC	UC	PC
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	1.66	3.30	5.03
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	1.44	2.61	4.69
COMMERCIAL INDUSTRIAL CUSTOM REBATES	1.10	4.38	2.66
ENERGY SOLUTIONS FOR THE HOME	1.56	2.96	5.16
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	0.51	0.87	2.10
RESIDENTIAL NEW CONSTRUCTION PROGRAM	0.84	1.28	3.48
RESIDENTIAL LOW INCOME	4.31	2.10	NA
TOTAL	1.24	2.47	3.92

Cost Effectiveness Results -- 20-YEAR PLANNING HORIZON (2006-2025)

		Dollars		
고 ^ 5 : [[[[[[[[[[[[[[[[[[Lifetime	Lifetim e	Net	B/C Ratio
Program	Benefits1	Costs	Benefits	
Total Resource Cost Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$156,147,781	\$94,308,896	\$61,838,885	1.66
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$61,106,538	\$42,562,089	\$18,544,449	1.44
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$108,866,518	\$98,819,764	\$10,046,754	1.10
ENERGY SOLUTIONS FOR THE HOME	\$66,842,820	\$42,807,877	\$24,034,943	1.56
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$34,119,037	\$66,560,103	(\$32,441,066)	0.51
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$35,525,657	\$42,441,563	(\$6,915,906)	0.84
RESIDENTIAL LOW INCOME	\$27,760,368	\$6,437,703	\$21,322,665	4.31
TOTAL	\$490,368,720	\$393,937,996	\$96,430,724	1.24
Utility Cost Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$156,147,781	\$47,257,501	\$108,890,281	3.30
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$61,106,538	\$23,369,990	\$37,736,548	2.61
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$108,866,518	\$24,840,922	\$84,025,597	4.38
ENERGY SOLUTIONS FOR THE HOME	\$66,842,820	\$22,594,415	\$44,248,405	2.96
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$34,119,037	\$39,196,089	(\$5,077,052)	0.87
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$35,525,657	\$27,702,435	\$7,823,222	1.28
RESIDENTIAL LOW INCOME	\$27,760,368	\$13,229,064	\$14,531,304	2.10
TOTAL	\$490,368,720	\$198,190,415	\$292,178,304	2.47
Ratepayer Impact Measure Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$156,147,781	\$329,581,395	(\$173,433,614)	0.47
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$61,106,538	\$133,939,761	(\$72,833,223)	0.46
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$108,866,518	\$227,201,725	(\$118,335,207)	0.48
ENERGY SOLUTIONS FOR THE HOME	\$66,842,820	\$134,457,721	(\$67,614,901)	0.50
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$34,119,037	\$106,336,850	(\$72,217,814)	0.32
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$35,525,657	\$86,929,026	(\$51,403,369)	0.41
RESIDENTIAL LOW INCOME	\$27,760,368	\$67,294,197	(\$39,533,829)	0.41
TOTAL	\$490,368,720	\$1,085,740,677	(\$595,371,957)	0.45
Participant Test Results:				
COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	\$282,323,895	\$56,115,411	\$226,208,483	5.03
COMMERCIAL INDUSTRIAL NEW CONTRUCTION	\$110,569,771	\$23,552,317	\$87,017,454	4.69
COMMERCIAL INDUSTRIAL CUSTOM REBATES	\$202,360,803	\$76,046,097	\$126,314,707	2.6 6
ENERGY SOLUTIONS FOR THE HOME	\$111,863,306	\$21,678,462	\$90,184,844	5.16
RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	\$67,140,761	\$31,957,349	\$35,183,413	2.10
RESIDENTIAL NEW CONSTRUCTION PROGRAM	\$59,226,591	\$17,036,425	\$42,190,166	3.48
RESIDENTIAL LOW INCOME	\$54,065,133	\$0	\$54,065,133	NA
TOTAL	\$887,550,261	\$226,386,061	\$661,164,200	3.92

¹Avoided costs based on HECO System Planning estimates (alternative allocation)

Cost Effectiveness Analysis - Input Summary Table HECO ENERGY EFFICIENCY DOCKET

General Data

Discount Rate (%) 8.09%
General Escalation Rate (%) 2.20%
Avoided Costs Escalation Rate
Program Start Year 2006

Analysis Framework

20-YEAR PLANNING HORIZON

Externality Factor:

0%

Table Titles:

DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY

Customer to Generation Ratio:

11.17%

FROM Docket DSM Backup Sheets (date).xls FILE:

Program-Specific Data

ogram-opeeme Data		Measure	Net to Gr	oss Ratio ¹	Retail	Rate ²
Program	Program Name	Lifetime	Energy	Demand	Energy (\$/kWh)	Demand (\$/kW)
1. CIEE	COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY	15	0.6530	0.6640	0.161	46
2. CINC	COMMERCIAL INDUSTRIAL NEW CONTRUCTION	15	0.5960	0.6100	0.161	46
3. CICR	COMMERCIAL INDUSTRIAL CUSTOM REBATES	15	0.7590	0.7550	0.161	46
4. ESH	ENERGY SOLUTIONS FOR THE HOME	15	0.8500	0.8500	0.197	0
5. REWH	RESIDENTIAL EFFICIENT WATER HEATING PROGRAM	15	0.7290	0.7310	0.197	0
6. RNC	RESIDENTIAL NEW CONSTRUCTION PROGRAM	15	0.8410	0.8850	0.197	0
7. RLI	RESIDENTIAL LOW INCOME	. 15	1.0000	1.0000	0.197	0
8. RDLC	RESIDENTIAL DIRECT LOAD CONTROL	15	1.0000	1.0000	0.197	0
9. CIDLC	COMMERCIAL INDUSTRIAL DIRECT LOAD CONTROL	15	1.0000	1.0000	0.161	46

^{1.} Source: HECO A&S Report for existing programs; estimated values for new programs based on program experience.

^{2.} Source: October 2005 recorded revenue per kwh for residential and commercial (Scheds J &P) customers. ECAF based on \$59.71/bbl LSFO.

TABLE 1, CIEE: DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: COMMERCIAL INDUSTRIAL ENERGY EFFICIENCY

Discount Rate 8º/
General Escalation Rate 2.2º/
Measure Lifetime (years) 1:

Participant Test Ratepayer Impact Measure Test Utility Cost Test Total Resource Cost Test	Benefits \$282,323,895 \$156,147,781 \$156,147,781 \$156,147,781	\$329,581,395	Net Benefits \$226,208,483 (\$173,433,614) \$108,890,281 \$61,838,885	B/C.Ratio 5.03 0.47 3.30 1.66																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Savings (Net Syster	n Levei)			-													_				
Peak Demand Reduction (kW)		2,284 15,266,176	4,567 30,532,351	6,851	9,135	11,418	13,697	15,661 105,015,883	17,590 118,281,870	19,493 131,429,865	21,396 144,577,860	22,384 151,432,516	23,373 158,287,172	24,361 165,141,829	25,349 171,996,485	26,337 178,851,141	27,273 185,418,506	27,305 185,775,374	27.337 186,132,243	27,369 186,489,111	27,401 186,845,980
Energy Savings (kWh)		15,260,176	100,200,100	45,798,527	01,004,703	76,330,878	91,575,903	6.68,610,601	110,201,070	131,429,003	144,377,800	131,432,316	130,201,112	105,141,629	171,090,463	170,031,141	103,410,000	103,773,374	100,134,213	100,402,111	100,0 (0,70)
Bates																					
Demand (\$/kW) Energy (\$/kWh)		\$46.00 \$0.1611	\$47.01 \$0.1646	\$48.05 \$0.1683	\$49.10 \$0.1720	\$50.18 \$0.1758	\$51.29 \$0.1796	\$52.42 \$0.1836	\$53.57 \$0.1876	\$54.75 \$0.1917	\$55.95 \$0.1960	\$57.18 \$0.2003	\$58.44 \$0,2047	\$59.73 \$0.2092	\$61.04 \$0.2138	\$62.38 \$0.2185	\$63.76 \$0.2233	\$65.16 \$0.2282	\$66.59 \$0.2332	\$68.06 \$0.2383	\$69.55 \$0.2436
raterigy (\$7 k.w.n)		\$0.1011	\$0.1040	\$0.1683	\$0.1720	3 0.1738	\$0.1790	¥0.1830	\$0.1070	3 0.1917	\$0.1900	\$0.2 003	\$ 0.2047	\$ 1,2092	\$0.2136	10.2100	\$0.2233	a (8,2202	\$17.2332	\$0.2.303	¥0.2450
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS: Avoided Costs (Utility, Ratepay	NPY																				
Demand	MEX	\$411,813	\$826,383	\$1,241,887	\$1,656,314	\$0	\$6	\$0	\$0	So	\$4,523,959	\$5,233,646	\$4,910,745	\$4,684,830	\$4,485,678	\$4,299,310	\$4,228,109	\$4,080,196	\$3,936,130	\$3,791,524	\$3,647,738
Energy		\$1,673,423	\$3,271,983	\$4,680,273	\$6,527,081	\$7,549,405	\$9,194,897	\$10,925,926	\$12,264,198	\$14,307,415	\$17,781,206	\$24,006,410	\$22,965,006	\$20,802,491	\$19,412,824	\$17,888,466	\$17,091,037	\$13,921,612	\$12,467,172	\$6,087,091	-\$4,335,728
Total	\$156,147,781	\$2,085,236	\$4,098,367	\$5,922,160	\$8,183,395	\$7,549,405	\$9,194,897	\$10,925,926	\$12,264,198	\$14,307,415	\$22,305,165	\$29,240,056	\$27,875,750	\$25,487,321	\$23,898,502	\$22,187,775	\$21,319,146	\$18,001,808	\$16,403,302	\$9,878,615	-\$687, 990
Avoided Costs (Total Resource)	1																				
Demand	•	\$411,813	\$826,383	\$1,241,887	\$1,656,314	\$0	\$0	\$()	\$0	\$ 0	\$4,523,959	\$5,233,646	\$4,910,745	\$4,684,830	\$4,485,678	\$4,299,310	\$4,228,109	\$4,080,196	\$3,936,130	\$3,791,524	\$3,647,738
Energy		\$1,673,423	\$3,271,983	\$4,680,273		\$7,549,405	\$9,194,897	\$10,925,926	\$12,264,198	\$14,307,415	\$17,781,206	\$24,006,410	\$22,965,006	\$20,802,491	\$19,412,824	\$17,888,166	\$17,091,037	\$13,921,612	\$12,467,172	\$6,087,091	-\$4,335,728
Total	\$156,147,781	\$2,085,236	\$4,098,367	. \$5,922,160	\$8,183,395	\$7,549,405	\$9,194,897	\$10,925,926	\$12,264,198	\$14,307,415	\$22,305,165	\$29,240,056	\$27,875,750	\$25,487,321	\$23,898,502	\$22,187,775	\$21,319,146	\$18,001,808	\$16,403,302	\$9,878,615	-\$687,990
Avoided Costs (Participant)																					
Demand		\$105,047	\$214,716		\$448,536	\$573,004	\$702,497	\$820,911	\$942,290	\$1,067,199	\$1,197,147	\$1,279,998	\$1,365,915	\$1,454,994	\$1,547,330	\$1,643,025	\$1,738,849	\$1,779,185	\$1,820,456	\$1,862,680	\$1,905,882
Energy Total	\$282,323,895	\$2,459,381 \$2,564,428	\$5,026,975 \$5,241,691			\$13,415,269 \$13,988,273	\$16,448,687 \$17,151,183	\$19,277,730 \$20,098,641	\$22,190,648 \$23,132,939	\$25,199,781 \$26,266,980	\$28,330,575 \$29,527,723	\$30,326,594 \$31,606,592	\$32,396,725 \$33,762,641	\$34,543,265 \$35,998,258	\$36,768,571 \$38,315,901	\$39,075,073 \$40,718,098	\$41,401,117 \$43,139,965	\$42,393,378 \$44,172,563	\$43,409,260 \$45,229,715	\$44,449,322 \$46,312,003	\$45,514,138 \$47,420,020
JOHN	4202,121,073	\$2,.174,420	\$3,241,071	40,033,312	\$10,949,723	\$13,700,273	\$17,131,103	420,090,041	\$ 2.7, 1.32,739	\$20,200,900	\$29,321,123	\$31,000,37 <u>2</u>	9 33,702,041	\$ 33,776,436	*30,313,901	\$40,71 6, 076	\$45,139,203	\$44,172,303	\$40,660,713	\$40,312,003	\$47,420,020
COST CALCULATIONS:																					
Cost Inputs:																					
Implementation		\$1,612,906	\$1,643,834	\$1,687,036	\$1,717,067	\$1,759,590	\$1,821,017	\$1,884,659	\$1,950,597	\$2,018,916	\$2,089,703	\$2,163,050	\$2,239,051	\$2,317,803	\$2,399,409	\$2,483,973	\$2,571,605	\$2,662,419	\$2,756,531	\$2,854,064	\$2,955,145
Incentives		\$2,265,425	\$2,265,425	\$2,265,425	\$2,265,425	\$2,265,425	\$2,315,264	\$2,366,200	\$2,418,257	\$2,171,458	\$2,525,830	\$2,581,398	\$2,638,189	\$2,696,229	\$2,755,546	\$2,816,168	\$2,878,124	\$2,941,443	\$3,006,155	\$3,072,290	\$3,139,880
Participant	NPY	\$5,917,290	\$6,047,470	\$6,180,515	\$6,316,486	\$6,455,449	\$6,597,469	\$6,742,613	\$6,890,950	\$7,042,551	\$7,197,487	\$7,355,832	\$7,517,660	\$7,683,049	\$7,852,076	\$8,024,822	\$8,201,368	\$8,381,798	\$8,566,197	\$8,754,654	\$8,947,256
Total Participant Costs	\$56,115,411	\$4,437,967	\$4,568,148	\$4,701,192	\$4,837,164	\$4,976,126	\$5,085,601	\$5,197,484	\$5,311,829	\$5,428,689	\$5,548,120	\$5,670,179	\$5,794,923	\$5,922,411	\$6,052,704	\$6,185,864	\$6,321,953	\$6,461,036	\$6,603,178	\$6,748,448	\$6,896,914
Total RIM Costs	\$329,581,395	\$6,442,759	\$9,150,950	\$11,987,973	\$14,932,217	\$18,013,288	\$21,287,465	\$24,349,500	\$27,501,792	\$30,757,354	\$34,143,256	\$36,351,041	\$38,639,881	\$41,012,291	\$43,470,856	\$46,018,239	\$48,589,694	\$49,776,424	\$50,992,401	\$52,238,357	\$53,515,045
Total Utility Costs	\$47,257,501	\$3,878,331	\$3,909,259	\$3,952,461	\$3,982,492	\$4.025,015	\$4,136,281	\$4,250,859	\$4,368.854	\$4,490,374	\$4,615,534	\$4,744,449	\$4,877,240	\$5,014,032	\$ 5,154,955	\$5,300,141	\$5,419,729	\$5,603,861	\$5,762,686	\$5,926,354	\$6,095,026
Total TRC Costs	\$94,308,896	\$7,530,196	\$7,691,304	\$7,867,551	\$8,033,553	\$8,215,038	\$8,418,486	\$8,627,272	\$ 8,841,548	\$9,061,467	\$9,287,191	\$9,518,882	\$9,756,711	\$10,000,852	\$10,251,485	\$10,508,795	\$10,772,973	\$11,044,216	\$11,322,728	\$11,608,718	\$11,902,401

Exhibit B Page 10 of 17

TABLE 2. CINC: DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: COMMERCIAL INDUSTRIAL NEW CONTRUCTION

Ratepayer Impact Measure Test	Penefix \$110,569,771 \$61,106,538 \$61,106,538 \$61,106,538	Costs \$23,552,317 \$133,939,761 \$23,369,990 \$42,562,089	Net Benefits \$87,017,454 (\$72,833,223) \$37,736,548 \$18,544,449	B/C Ratio 4.69 0.46 2.61 1.44																	202
Cumulative Savings (Net System	Y evel)	2006	2007	2008	2009	2010	2011	2 <u>012</u>	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Peak Demand Reduction (kW)	TOTAL	874	1,747	2,621	3,494	4,368	5,235	6,013	6,765	7,506	8,246	8,763	9,279	9,796	10,312	10,829	11,194	11,194	11,194	11,194	11,194
Energy Savings (kWh)		5,823,049	11,646,098	17,469,147	23,292,196	29,115,244	34,908,090	40,135,614	45,239,107	50,288,753	55,338,400	58,668,649	61,998,897	65,329,145	68,659,393	71,989,642	74,068,615	74,068,615	74,068,615	74,068,615	74,068,615
Rates																					
Demand (\$/kW)		\$46.00	\$47.01	\$48.05	\$49.10	\$50.18	\$51.29	\$52.42	\$ 53.57	\$54.75	\$55.95	\$57.18	\$58.44	\$59.73	\$61.04	\$62.38	\$63.76	\$65.16	\$66.59	\$68.06	\$69.55
Energy (\$/kWh)		\$0.1611	\$0.1646	\$0.1683	\$0.1720	\$0.1758	\$0.1796	\$0.1836	\$0.1876	\$0.1917	\$0.1960	\$0.2003	\$0.2047	\$0.2092	\$0.2138	\$0.2185	\$0.2233	\$0.2282	\$0.2332	\$0.2383	\$0.2436
		2006	2007	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS: Avoided Costs (Utility, Rateogy	NPY																				
Demand	MAL	\$157,526	\$316,106	\$475.043	\$633,569	\$0	50	\$0	\$0	\$0	\$1,743,583	\$2,048,821	\$1,949,657	\$1.883.845	\$1.824.846	\$1,767,718	\$1,735,386	\$1,672,717	\$1,611,769	\$1,350,743	\$1,490,194
Energy		\$638,302	\$1,248,048	\$1,785,218	\$2,489,655	\$2,879,605	\$3,505,030	\$4,175,737	\$4,690,671	\$5,474,419	\$6,805,907	\$9,300,668	\$8,995,075	\$8,229,344	\$7,749,418	\$7,200,313	\$6,827,309	\$5,550,545	\$4,961,129	\$2,417,634	-\$1,718,749
Total	\$61,106,538	\$795,827	\$1,564,154	\$2,260,261	\$3,123,224	\$2,879,605	\$3,505,030	\$4,175,737	\$4,690,671	\$5,474,419	\$8,549,491	\$11,349,489	\$10,944,732	\$10,113,189	\$9,574,264	\$8,968,032	\$8,562,695	\$7,223,261	\$6,572,899	\$3,968,377	-\$228,555
Avoided Costs (Total Resource)																					
Demand		\$157,526	\$316,106	\$475,043	\$633,569	\$0	\$0	\$0	\$0	\$0	\$1,743,583	\$2,048,821	\$1,949,657	\$1,883,845	\$1,824,846	\$1,767,718	\$1,735,386	\$1,672,717	\$1,611,769	\$1,550,743	\$1,490,194
Energy		\$638,302	\$1,248,048	\$1,785,218		\$2,879,605	\$3,505,030	\$4,175,737	\$4,690,671	\$5,474,419	\$6,805,907	\$9,300,668	\$8,995,075	\$8,229,344	\$7,749,418	\$7,200,313	\$6,827,309	\$5,550,545	\$4,961,129	\$2,417,634	-\$1,718,749
Total	\$61,106,538	\$795,827	\$1,564,154	\$2,260,261	\$3,123,224	\$2,879,605	\$3,505,030	\$4,175,737	\$4,690,671	\$5,474,419	\$8,549,491	\$11,349,489	\$10,944,732	\$10,113,189	\$9,574,264	\$8,968,032	\$8,562,695	\$7,223,261	\$6,572,899	\$3,968,377	-\$228,555
Avoided Costs (Participant)																					
Demand		\$40,182	\$82,133	\$125,909	\$171,573	\$219,184	\$268,499	\$315,170	\$362,408	\$410,921	\$461,394	\$501,082	\$542,294	\$585,076	\$629,479	\$675,551	\$713,693	\$729,395	\$745,441	\$761,841	\$778,602
Energy Total	\$110,569,771	\$938,093 \$978,276	\$1,917,462 \$1,999,595	\$2,939,470 \$3,065,379	\$4,005,518 \$4,177,090	\$5,117,049 \$5,336,233	\$6,270,124 \$6,538,622	\$7,367,681 \$7,682,851	\$8,487,227 \$8,849,635	\$9,642,143 \$10,053,064	\$10,843,768 \$11,305,161	\$11,749,262 \$12,250,344	\$12,689,349 \$13,231,643	\$13,665,114 \$14,250,190	\$14,677,671 \$15,307,150	\$15,728,166 \$16,403,718	\$16,538,389 \$17,252,082	\$16,902,234 \$17,631,628	\$17,274,083 \$18,019,524		\$18,042,503 \$18,821,105
1000	\$110,000,771	43.10,210	41,772,333	¢.11.5C01,1.9	44,177,020	43,330,633	4nd-10/new	41,002,031	40,047,000	\$10,033,004	411,000,101	**************************************	***********	#1 1,000,170	410,507,150	*10,100,110	#11,200,000	417,001,000	410,017,001	**********	******
COST CALCULATIONS:																					
Cost Inputs:																					
Implementation		\$947,623	\$978,219	\$1,000,092		\$1,042,763	\$1,080,141	\$1,118,891	\$1,159,062	\$1,200,709	\$1,243,885	\$1,288,648	\$1,335,057	\$1,383,173	\$1,433,060	\$1,484,783	\$1,538,413	\$1,594,018	\$1,651,674	\$1,711,457	\$1,773,446
Incentives		\$936,020	\$936,020	\$936,020	\$936,020	\$936,020	\$956,613	\$977,658	\$999,167	\$1,021,148	\$1,043,614	\$1,066,573	\$1,090,038 \$3,080,597	\$1,114,019 \$3,148,370	\$1,138,527	\$1,163,575 \$3,288,422	\$1,189,173 \$3,360,768	\$1,215,335 \$3,434,704	\$1,242,072 \$3,510,268	\$1,269,398 \$3,587,494	\$1,297,325 \$3,666,419
Participant	NPV	\$2,424,795	\$2,478,141	\$2,532,660	\$2,588,378	\$2,645,322	\$2,703,520	\$2,762,997	\$2,823,783	\$2,885,906	\$2,949,396	\$3,014,283	\$3,U8U,39 <i>1</i>	\$3,146,370	\$3,217,634	\$3,200,424	\$3,300,700	\$3,434,704	\$3,310,400	\$3,307,424	\$3,000,419
Total Participant Costs	\$23,552,317	\$1,866,927	\$1,920,272	\$1,974,792	\$2,030,510	\$2,087,454	\$2,133,378	\$2,180,313	\$2,228,280	\$2,277,302	\$2,327,402	\$2,378,605	\$2,430,935	\$2,484,415	\$2,539,072	\$2,594,932	\$2,652,020	\$2,710,365	\$2,769,993	\$2,830,933	\$2,893,213
Total RIM Costs	\$133,939,761	\$2,861,918	\$3,913,834	\$5,001,492	\$6,136,145	\$7,315,016	\$8,575,376	\$9,779,401	\$11,007,864	\$12,274,921	\$13,592,660	\$14,605,565	\$15,656,738	\$16,747,382	\$17,878,736	\$19,052,076	\$19,979,668	\$20,440,982	\$20,913,271	\$21,396,809	\$21,891,875
Total Utility Costs	\$23,369,990	\$1,883,643	\$1,914,239	\$1,936,112	\$1,959,054	\$1,978,783	\$2,036,754	\$2,096,549	\$2,158,229	\$2,221,857	\$2,287,499	\$2,355,221	\$2,425,095	\$2,497,191	\$2,571,587	\$2,648,358	\$2,727,586	\$2,809,353	\$2,893,747	\$2,980,855	\$3,070,771
•						.,	\$4,030,734			\$4,441,65 <i>1</i>						,	\$i.,121,386	,		,,	
Total TRC Costs	\$42,562,089	\$3,372,418	\$3,456,359	\$3,532,752	\$3,611,412	\$3,688,085	\$3,783,661	\$3,881,888	\$3,982,845	\$4,086,615	\$4,193,281	\$4,302,931	\$4,415,654	\$4,531,543	\$4,650,694	\$4,773,206	\$4,899,180	\$5,028,723	\$5,161,942	\$5,298,951	\$5,439,864

Exhibit B Page 12 of 17

£6£,018,	21 \$	965,751,51 \$	292'0H8'11 \$	\$10,552,11\$	0/T,££2,11 \$	9L0'5+6'01 \$	† 55,030,01 \$	856,285,01	++0'611'01\$	LL5,028,02	155,700,92	£80,562,083	\$9,123,623	S47,198,8 \$	642,666,249	961'991'8\$	9tt'L9C'8\$	592,470,8\$	628,047,08	\$98,819,764	Total TRC Costs
160,EFE,	E\$ 895'952'E\$	\$3,137,526	181,050,E \$	\$2,945,258	628,£28,2 \$	\$6£,637,2 \$	158'619'7\$	\$2,597,102	150,712,22	809'661'2\$	189'196'7 \$	261,292,192	150,222,48	\$5,154,182	702,880,58	\$2,060,220	\$5,028,934	960,690,1\$	259,440,13	226'0+8'+2\$	Total Utility Costs
877,778	98\$ 088,177,88	165,206,75\$	021,050,7£ \$	078,282,48 \$	\$32'17t'5E	97E,012,4E \$	\$ 29,705,62 \$	\$27,006,953	080,114,45\$	918'+16'17\$	\$19,515,062	\$17,208,807	\$14,993,126	971,838,517	\$10,822,194	597,368,88	896'StO'L\$	357,172,726	227,232,5\$	\$27,102,725	Total RIM Coats
967,427,	6\$ £9Z'8RF'6\$	186,752,98	H97,EE0,0\$	264,618,8 3	\$8,602,823	092'565'8\$	980'161'8\$	9F9'L66'L \$	882,808,7\$	£98,010,7 ≩	145,864,78	\$72,122,7 \$	3E8,880,7 \$	96 7, 026,9 \$	0£0,727,0 \$	592,282,0\$	008,714,88	815,452,68	98+'+96'+\$	Y4N 760,840,87 8	Total Participant Costs
766,708,		181,780g	506,007,0 8	861,240 \$ 297,268,0 \$	0+L'+0£'6 \$	895,480,9 \$	901'998'8\$ 901'998'8\$	\$865,346 \$8,655,202	069'6 ++'8\$	814'64Z'8 \$ 644'67Z'8 \$	142,420,8 \$	510,468 ,7 \$	109'873,7 \$	20£,057 \$ 258,791,7 \$	770,156,7 8	216'6+1'L\$	7+1,280,8 2	561,618,6 2	661,652,2 8		Incentives
300,116,		\$1.50.345	788.ET0,52	021,000,128	850,929,13	902,058,18	5++'+6L'1 \$	227,0E7,13	+9E'699'1\$	951,010,18	980,688,1 \$	690'86†'1\$	\$1,445,023	088,595,18	272,446,18		866,482,18		969'077'1\$		Cost Inputs:
																					COST CALCULATIONS:
780,41€,	96\$ Z96'Z66'96	\$30'89 L'+E\$	££9'610'+£ \$	216,782,86 8	557,072,25 \$	Z86'++4'6Z\$	£17,820,72 \$	158'60+'+7\$	820'+68'12 \$	L0Z'SL+'61\$	876,081,71 2	\$19'916 ' +1 \$	210,177,21 8	+66'01L'01 \$	780,EE7,8 \$	\$6,836,545	+£0'\10'\$\$	\$3,272,690	121,100,18	\$202,360,803	hio'l'
678,810,				\$32,096,321	204,804,168	757,085,852	\$18,880,028	881,355,528	649'011'12\$	100.877.812	£57,052,01\$	\$14,382,912	\$12,314,137	£94'47£'01\$	\$8,421,203	01616598	655,758,F\$	965,861,68	FER'EFS'1\$	_	guedil
805,002		176,642,18	601,712,18	166'061'1\$	156,801,13	052,1-00,12	696'996\$	£9£,£78 \$	646,687\$	908'969\$	929,5198	107,5558	866'951'\$	OET'ERES	1817,184	909,4428	\$05,971	t60°211\$	782,78 2		bnsmaG
	13 000 100 10	12.0.0.0																			Aroided Costs (Participant)
118'818	811,012,12	618,716,212	+1+'695'61\$	\$16,145,833	969'971'41\$	006,722,81\$	59+'908'81\$	\$19,824,185	180,410,013	1+1'61+'+1\$	668,885,9\$	190'616'L\$	112,679,8	172,ETT,2 2	800,927,48			\$5,504,593	\$1,275,042	812,008,801\$	latoT
+09'SEE	£\$- Zt6'169't\$	511,820,0\$	210.772.032	078,042,514	016,776,418	199'711'51\$	£15,693,023	\$16,684,266	811,117,018	949,587,118	668,885,0\$	t90'6t6'L\$	117,676,01	175,577,28	800,0£7,4.\$	292,791,4262	096,750,2\$	166,620,28	284,080,18		guedh
£67,08£,	7\$ 958'185'7\$	£70,080,£\$	\$2,791,382	£96'968'7\$	\$86,040,6 2	652,680,68	Stt, E11, E8	026'6E1'E\$	\$3,202,953	561,550,28	118	0\$	08	08	0\$	65T E06\$	tst 119 s	799'051\$	0851725		bearinsG
																					Arwided Costs (Total Resource)
118,818		\$12,317,819							180,110,012	[+1'61+'+1 \$		190'616'L\$	112,676,08	175,773,277	800'6EL't\$	297,790,42 122,000,22	\$3,615,215	\$2,650,593	21°512°15	_815'998'801 \$	Energy Tenal
HOU, SEE,		\$1,850,0\$	250,277,012	078,042,518	016,776,418	199'771'91\$	\$15,693,023	997'189'91\$	821,117,01 2	84,6587,11 \$	668,886,9 2	190°616°4\$	117'6L6'9\$	175,677,68 0 3	0\$	\$1007.259	+52,777 8	799'09t\$	085,455 \$		bnemaGi
#6Z'98f'	\$2,587,836 \$2	276,980,£	\$2,791,382	£96'968'7 \$	286,640,68	952,280,E 2	2++,E11,E2	026'661'6\$	£30 200 £8	201 559 63	us	OS .	03	1/13	03	030 2003	736 2278	277 (121 3	ONS I CCS	AIN	Avoided Coats (Utility, Ratepay
202	2024	2022	2002	1202	2020	2019	2018	2702	2016	2012	2014	2013	2012	7702	2010	2009	8002	2002	9002		
nc+2:0#	\$0.2383	\$0.2332	2822.0\$	\$0.2233	\$0.2185	\$0.2138	Z60Z'0\$	Lt-02:0\$	ECOLETOS	0961 0\$	Z161:0\$	9281.03	90.1836	9641.03	8571.0\$	\$0.1720	\$0.1683	9191'0\$	1191'0\$		Emergy (\$/kWh)
9642.0 \$	90.89\$	6979\$	91.59\$	97.53	86.29\$	t0.19\$	£7.028	tt:85\$	81749\$	56.55 \$	SLTS	78.62 \$	24.25\$	62.12\$	81.08\$	01'6+\$	S0'8 +\$	10'2+\$	00'9t\$		Demact
55 055	20.023	02 //3	71.273	12.073	(/C C/3		22.023		0,233	10115											Hates
													ctrontin	inifortic	686,819,74	richector	28,749,233	951,661,61	870,682,0		guerfil Savings (RWN)
L91'9tL	'Eti			781,347,£41	T01,047,E41	680,E31,4E1	110,082,421	££6,096,411	105,413,856	877,0E8,20	007,7142,08	76,664,622	145,180,76	794,894,78		186,4		164,5	870.582.0 840.582.0		Peak Demand Reduction (RW)
089,81	085,81	089'81	085,81	089,81	085,81	SE4,71	061,51	t+6'+1	669,£1	15454	802,11	£96'6	817,8	274,7	T.C., 2	180 F	9£2 ' £	tor c	5761	(lava-l	Cumulative Savings (Net System.
\$202	₹202	2023	2022	1202	2020	2019	2018	Z10 <u>2</u>	9102	2015	₹07₹	2013	2012	1102	010Z	<u> 7007</u>	8002	2002	9002		
																	1.10	t57,840,01 8	t94'618'86 \$	815,658,801	
																	857	£84'052'201	226'018'17\$		
																	81.0	(T02,285,811 2)			
																	99.2	107,412,021			125 Transpirited
																	One R D\G	ztitana/L1a/	संस्कृ	शपुत्रसन्तु	

BEOGRYM NYME: COMMERCIVT INDIGLIBIT COZLOM BEBYLE?

LYBITE 3' CICK: DELYITED SOMMYKA BOK 5000 SLYKL AEVE - 50-AEVE BTYNNING HOBISON SOMMYKA

2.2%

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Page 7 of 11

PROGRAM NAME: ENERGY SOLUTIONS FOR THE HOME TABLE 4, ESH; DETAILED SUMMARY FOR 2006 START YEAR - 20-YEAR PLANNING HORIZON SUMMARY

Energy Savings (kWh)		E50't E18'E61'91	050,8 745,551,85	177,8 947,EUS,SE	10,01 125,475,85
Comulative Savings (Net System Level)		9007	7007	2005	600Z
Total Resource Cost Test \$66,842,820	7,420	TT8,TU8,212	£t6't£0't7\$	95.1	
Dillity Cost Test \$66,842,820	028,5	\$15,594,415	\$44,248,405	96%	
\$ 058,548,46\$ isoT sussed tanged tayedans?	028,5	127,724,45121	(100,410,762)	05.0	
30E,E38,1112 12ssT inagionisted	905,58	\$21,678,462	tt8't81'06\$	91°S	
सर्वेश्वास्त्र	स्राप:	2120.2	अवेशकश्ची १५%	BAC Batio	

March Marc																						
Part	Total TRC Costs	778,708,21 2	\$71'917'+\$	168'+18 '£\$	(12t'G+5'E\$	92E,7E0,E \$	169,532,5\$	162,720,£ \$	164,E27,E \$	794,528,£ \$	\$3,953,984	84'028'339	068,681,4\$	L0019LZ+\$	\$4,389,502	\$4,506,233	84,626,298	008'612'15	++8'9 <u>/</u> 8'+ \$	045,700,28	100°Z†1°S\$	\$5,280,343
The properties of the proper	Total Utility Coats	\$15,594,415	\$2,264,862	\$11,640,5\$	£2£,7+8,1 \$	946,878,1 2	227,558,18	1/1/888'1\$	E58'516'1 \$	187,1400,2\$	\$19°590°7\$	\$2,128,429	\$2,193,282	917'097'7\$	\$2,329,395	\$2,400,804	645,474,549	\$2,550,713	\$2,629,377	629,017,528	722,407,5 \$	\$2,881,255
	Total RIM Costs	121,784,461\$	018,124,28	187,002,78	746,034,8 \$	274,010,0 8	159,040,011	805,720,0\$	S67,E07,6 \$	909'+9+'01\$	\$11,254,453	804,652,518	13,012,151	920'8+4'+1\$	964'980'51\$	738,854,21 \$	054,667,218	197,851,51\$	£20,742,023	£9t't£6'91 \$	316,166,71\$	£28,757,71 \$
Particular Par	Lotal Participant Costs	79r'8L9'17 \$	156'561'2\$	t96'816'1 \$	£55,058,1 \$	818,288,1\$	11,848,130	687,888,1\$	Z+E'0E6'I\$	018,279,18	112,010,2\$	852,050,5\$	106'501'7\$	\$2,152,230	678,901,5\$	026'2 +7'7\$	921,792,5\$	696 ¹ LHE'7 \$	t29'66£'2 \$	91+'75+'7\$	\$5,506,369	\$2,561,509
Part		YAN			u cleadas	100'1 1000	av tint cina	ton't or'z#	Ch4'C70'78	1/0'190'7#	800,0+1,42 \$	596'008'7 t	+9C'798'7 ¢	196,620,24	\$2,989,923	Z07,280,5 \$	125,122,927	169'161'6\$	748,132,E \$	809,555,5\$	L+6'9()+'E\$	(X)0,184,5 \$
Part																	871,1762	t+5'266\$	086,410,18	L69*950*1\$	t05,050,1 \$	£18'780'1\$
Colic California Colic Calif									\$1,129,850	81,170,826	\$12,213,315	971,725.18	990,608,1\$	21,350,446	672.095.18	166,024,12	176,602,12	841,855,18	700,410,12	260,873,12	£20,257,1 2	21,897,12
Coloration Col	Cost Inputs:																					
Coloration Col	ichiovitera centra i ann																					
Part	SOST CALCIU ATTOMS.																				costnoots . A	
Figure Part	lesoT	905,538,111\$																				
Part																						
Secolar Seco			0\$	05	(15	(1)	05	(/5	1/3	03	03		(1)	••								
First Firs	(Apprinted Court (Berlinia)															most cutob		month ant A	Louteerine	cactacatat	COM COMPLE	ometovert d
Fine Point		\$66,842,820																				
Figure F	44																					
Part			300 (FT)	L12 22C 13	070 082 12	617 660 13	1/3	(13	03	1.4		237 000 00										
Figure F	4, 12, 13, 17, 17, 17, 17, 17, 17, 17, 17, 17, 17													nooles store	FF-ctonute A	mitteechia	t i t'heofa#	2005100118	initector	cecocotor	€07*077*+ \$	026'06'01#
Fine Properties First Fi		\$66,842,820																				
Part																	019725075	150,098,2\$	79E'F6L'Z\$	91:5,290,546	665,002,28	811,081,58
BENELLI CYTCHYLIONS: Sorting Representative Methods March March		AdN	300 OCL3	112 330 13	020 002 13				-													
First Firs	BENEHLL CVITCHTVLIONS:						*****	TTEN	WEAR.	7978	TANA	770 9	0102	7107	QTN7	7307	0202	1707	7707	707	\$202	\$202
Cartam Target Figure Target Tar			9002	2002	2008	2009	2010	2011	2013	2002	MOC	3100	910C	2102	8100	0.00	4000					
Design D	Fueth. $(2/kN\mu)$		8961'0\$	1102.0\$	\$0.2056	\$0.2101		\$0.2194														
Care			00'0\$	(x):()\$	80.00	00.08	00.0\$	60.03	00'0\$	00.08	00.08	00.0\$	90.02	00.08	OCHOS	00.08	(N) US	(10) (10)	0005	(11/12)	(ii) (is	(K) (IS
(Tayla market sylb submist 2 sylb submist 3 sylb sylb sylb sylb sylb sylb sylb sylb	Haise																					
Cumulative (Net Sixtem Level) 12.06 12.06 12.06 12.06 12.06 18.700 18.7	ETHELES, PRAINES (KANH)		16,193,843	745,661,85	847,EU2,SE	122,472,85	124,884,24	009't0t'SE	34,595,219	720,E19,0E												
	Peak Demand Reduction (k/l)		£\$0't	6£6,8	177,8	10,603	12,085	99F11	12,015	9+1,51	14,278	057,21	17,230	007,81	007,81	607,81	007.81	U07.81	007.81	007.81	1907.81	CRIT BS
	Cumulative Savings (Net System	(laya)	2002	7.007	9002	2002	2010	1102	2102	2013	507	5002	2016	2102	8102	2019	2020	1202	2022	2023	\$20Z	2025

TABLE 5. REWH: DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: RESIDENTIAL EFFICIENT WATER HEATING PROGRAM

Discount Rate	8%
General Escalation Rate	2.2%
Measure Lifetime (years)	15

Participant Test Ratepayer Impact Measure Test Utility Cost Test Fotal Resource Cost Test	Benefits \$67,140,761 \$34,119,037 \$34,119,037 \$34,119,037	Costs \$31,957,349 \$106,336,850 \$39,196,089 \$66,560,103	Net Benefits \$35,183,413 (\$72,217,814) (\$5,077,052) (\$32,441,066)	B/C Ratio 2.10 0.32 0.87 0.51																	
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Cumulative Savings (Net System	Level)						. 700	4,419	5.051	5,682	6,274	6,866	7,459	8,051	8,643	9,235	9,235	9,235	9,235	9,235	9,235
Peak Demand Reduction (kW) Energy Savings (kWh)		631 2,745,957	1,263 5,491,915	1,894 8,237,872	2,525 10,983,830	3,157 13,729,787	3,788 16,475,745	19,221,702	21,967,660	24,713,617	27,275,745	29,837,872	32,400,000	34,962,128	37,524,255	40,086,383	40,086,383	40,086,383	40,086,383	40,086,383	40,086,383
Rates																go 30	\$0.00	P/14/10	\$6.00	\$0.00	So.(a)
Demand (\$/kW) Energy (\$/kWh)		\$0.00 \$0.1968	\$0.00 \$0.2011	\$0.00 \$0.2056	\$0.00 \$0.2101	\$0.00 \$0.2147	\$0.00 \$0.2194	\$0.00 \$0.2242	\$0.00 \$0.2292	\$0.00 \$0.2342	\$0.00 \$0.2394	\$0.00 \$0.2446	\$0.00 \$0.2500	\$0.00 \$0.2555	\$0.00 \$0.2611	\$0.00 \$0.2669	\$0.2728	\$0.00 \$0.2788	\$0.2849	\$0.2912	\$0.2976
		2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
BENEFIT CALCULATIONS: Avoided Costs (Utility, Ratenay	NPY																				
Demand		\$113,852	\$228,466	\$343,338	\$457,913	\$0	\$()	\$0	\$0	\$0	\$1,326,632	\$1,605,439	\$1,567,111	\$1,548,246	\$1,529,423	\$1,507,539	\$1,431,690	\$1,379,988	\$1,329,707	\$1,279,300	\$1,229,408
Energy		\$301,002	\$588,538		\$1,174,039	\$1,357,926	\$1,654,286	\$1,999,839	\$2,277,743	\$2,690,317	\$3,354,564	\$4,730,161	\$4,700,736	\$4,404,089	\$4,235,271	\$4,009,390	\$3,694,981 \$5,126,671	\$3,003,988 \$4,383,977	\$2,684,993 \$4,014,700	\$1,308,438 \$2,587,799	-\$930,197 \$299,210
Total	\$34,119,037	\$414,854	\$817,004	\$1,185,188	\$1,631,952	\$1,357,926	\$1,654,286	\$1,999,839	\$2,277,743	\$2,690,317	\$4,681,195	\$6,335,600	\$6,267,846	\$5,952,335	\$5,764,694	\$5,516,928	\$3,120,071	34,363,977	\$4,014,700	\$4.361,199	\$277,210
Avoided Costs (Total Resource)																					
Demand		\$113,852	\$228,466	\$343,338	\$457,913	\$0	\$()	\$0	\$0	\$0	\$1,326,632	\$1,605,439	\$1,567,111	\$1,548,246	\$1,529,423	\$1,507,539	\$1,431,690	\$1,379,988	\$1,329,707	\$1,279,360 \$1,308,438	\$1,229,408 -\$930,197
Energy Total	\$34,119,037	\$301,002 \$414,854	\$588,538 \$817,004	\$841,850 \$1,185,188	\$1,174,039 \$1,631,952	\$1,357,926 \$1,357,926	\$1,654,286 \$1,654,286	\$1,999,839 \$1,999,839	\$2,277,743 \$2,277,743	\$2,690,317 \$2,690,317	\$3,354,564 \$4,681,195	\$4,730,161 \$6,335,600	\$4,700,736 \$6,267,846	\$4,404,089 \$5,952,335	\$4,235,271 \$5,764,694	\$4,009,390 \$5,516,928	\$3,694,981 \$5,126,671	\$3,003,988 \$4,383,977	\$2,684,993 \$4,014,700	\$2,587,799	\$299,210
	404,12,00	4111,031	*017,507	*1,100,100	#1,001,002	41,007,7200	V 2,000 1,000	4.,		•=,,	* 1,000	4		1-1	4-1 , - 1, 1	*					
Avoided Costs (Participant)																60	\$o	ŝo	Su	SO	\$()
Demand		\$0 \$540,404	\$0 \$1.104.587	\$0 \$1,693,331	\$0 \$2,307,446	\$0 \$2,947,762	\$0 \$3,615,136	\$0 \$4,310,447	\$0 \$5,034,602	\$0 \$5,788,534	\$0 \$6,529,197	\$0 \$7,299,648	\$0 \$8,100,838	\$0 \$8.933.748	\$9,799,385	\$0 \$10,698,786	\$10,934,159	•		\$11,671,807	
Energy Total	\$67,140,761	\$540,404	\$1,104,587	\$1,693,331	\$2,307,446	\$2,947,762	\$3,615,136	\$4,310,447	\$5,034,602	\$5,788,534	\$6,529,197	\$7,299,648	\$8,100,838	\$8,933,748	\$9,799,385	\$10,698,786		\$11,174,711			
COST CALCULATIONS:	. , . ,					, ,	., .														
Cost Inputs:																					
Implementation		\$1,651,667	\$1,676,211	\$1,737,552	\$1,794,149	\$1,854,637	\$1,921,585	\$1,991,000	\$2,062,973	\$2,137,6(X)	\$2,214,980	\$2,295,216	\$2,378,414	\$2,464,685	\$2,554,144	\$2,646,910	\$2,743,107	\$2,842,863	\$2,946,311	\$3,053,589	\$3,164,841
Inconives		\$1,470,000	\$1,470,000	\$1,470,000	\$1,470,000	\$1,470,000	\$1,502,340	\$1,535,391	\$1,569,170	\$1,603,692	\$1,638,973	\$1,675,030	\$1,711,881	\$1,749,543	\$1,788,032	\$1,827,369	\$1,867,571	\$1,908,658	\$1,950,648	\$1,993,563	\$2,037,421
Participant		\$2,551,500	\$2,607,633	\$3,944,201	\$4,030,974	\$4,119,655	\$4,210,288	\$4,302,914	\$4,397,578	\$ 4,494,325	\$4,593,200	\$4,694,250	\$4,797,524	\$4,903,069	\$5,010,937	\$5,121,178	\$5,233,843	\$5,348,988	\$ 5,466,666	\$5,586,932	\$5,709,845
Total Participant Costs	NPY \$31,957,349	\$1,479,870	\$1,536,003	\$2,872,571	\$2,959,344	\$3,048,025	\$3,115,082	\$3,183,614	\$3,253,653	\$3,325,233	\$3,398,389	\$3,473,153	\$ 3,549,562	\$3,627,653	\$3,707,461	\$ 3,789,025	\$3,872,384	\$3,957,576	\$4,044,643	\$4,133,625	\$4,224,565
Total RIM Costs	\$106,336,850	\$3,662,071	\$4,250,798	\$4,900,883	\$ 5,571,595	\$6,272,400	\$7,039,061	\$7,836,838	\$8,666,745	\$9,529,826	\$10,383,150	\$11,2 69,894	\$12,191,133	\$13,147,975	\$14,141,561	\$15,173,065	\$15,544,838	\$15,926,232	\$ 16,317,514	\$16,718,959	\$17,130,849
Total Utility Costs	\$39,196,089	\$3,121,667	\$3,146,211	\$3,207,552	\$3,264,149	\$3,324,637	\$3,423,925	\$3,526,391	\$3,632,143	\$3,741,292	\$3,853,953	\$3,970,246	\$4,090,295	\$4,214,227	\$4,342,176	\$4,474,279	\$4,610,678	\$4,751,521	\$4,8 96,959	\$5,047,152	\$5,202,262
Total TRC Costs	\$66,560,103	\$4,203,167	\$4,283,844	\$5,681,753	\$5,825,122	\$5,974,292	\$6,131,873	\$6,293,914	\$6,460,551	\$6,631,925	\$6,808,180	\$6,989,466	\$7,175,937	\$7,367,754	\$7,565,081	\$7,768,088	\$7,976,950	\$8,191,851	\$8,412,977	\$8,640,522	\$8,874,686

Exhibit B Page 15 of 17

HECO Energy Efficiency Docket CE Analysis DOCKET (NEW AC w ROC) (11-03-06) xls

TABLE 6. RNC: DETAILED SUMMARY FOR 2006 START YEAR – 20-YEAR PLANNING HORIZON SUMMARY PROGRAM NAME: RESIDENTIAL NEW CONSTRUCTION PROGRAM

Discourt Rate General Escalation Rate Measure Lifetime (years)

CE Analysis DOCKET (NEW AC w ROC) (11-03-06).xls

Net Benefits E \$42,190,166 (\$51,403,369) \$7,823,222 CDSIX \$17,036,425 \$16,929,026 \$27,702,435 Benefits \$59,226,591 \$35,525,657 \$35,525,657 Naticipant Test Satepayer Impact Measure Test Sulvy Cost Test

Unlity Cost Test Fond Resource Cost Test	\$35,525,657 \$35,525,657	\$27,702,435 \$42,441,563	\$7,823,222 (\$6,915,900)	1.28 0.84																	
		2006	2007	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Adminiative zavings (iver xystem Level) Peak Demand Reduction (kW) Energy Savings (kWh)	Tevel)	787 2,542,113	2,002	2,996 8,267,217 10	3,989 10,641,102 13	4,982 13,014,988 1	5,939 15,203,228	6,8% 17,391,467	7,853	8,810 21,767,945	9,754	10,697	11,640	12,584	13,527	14,471	14,471	14,471	14,471	14,471	14,471
Bater Demund (\$/kW) Energy (\$/kWh)		\$0.00 \$0.1968	\$0.00	\$0.00	\$0.00	\$0.00	\$0.40	\$0.00	\$0.00 \$0.2292	\$0.00	\$0.00	\$0.00 \$0.2446	\$0.00	\$0.00 \$0.2555	\$0.2611	\$0.00	\$0.00	\$0.00 \$0.2788	\$0.00	\$0.2912	\$0.00
RENEET CALCULATIONS		2006	2002	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Aveided Costs (Utility, Ratepay Demand Energy Total	NPV \$35,525,657	\$141,878 \$278,657 \$420,536	\$362,252 \$631,556 \$993,807 \$	\$543,007 \$723,290 \$844,849 \$1,137,406 \$1,387,856 \$1,800,695		\$1,287,230 \$	\$0 \$1,526,516 \$1,526,516 \$	\$08 \$1,800,420 \$	\$0 \$2,030,145 \$2,030,145	\$0 \$2,369,652 \$2,369,652	\$2,062,295 \$2,938,849 \$5,001,144	\$2,501,054 \$4,125,432 \$6,626,486	\$2,445,731 \$4,084,256 \$6,529,987	\$2,419,987 \$3,814,109 \$6,234,096	\$2,393,717 \$3,657,607 \$6,051,323	\$2,362,174 \$3,454,030 \$5,816,204	\$2,243,327 \$3,183,172 \$5,426,498	\$2,162,314 \$2,587,892 \$4,750,206	\$2,083,528 \$2,513,082 \$4,396,610	\$2,004,640 \$1,127,200 \$3,131,840	\$1,926,368 -\$801,351 \$1,125,017
Avoided Costs (Total Resource) Denund Energy Total	\$35,525,657	\$141,878 \$278,657 \$420,536	\$362,252 \$631,556 \$993,807 \$	\$502.552 \$543,047 \$723,290 \$631,556 \$844,849 \$1,337,406 \$993,807 \$1,387,856 \$1,800,695		\$0 \$1,287,230 \$ \$1,287,230 \$	\$0 \$1,526,516 \$1,526,516	\$1,809,420 \$ \$1,809,420 \$	\$0 \$2,(30,145 \$2,030,145	\$0 \$2,369,652 \$2,369,652	\$2,062,295 \$2,938,849 \$5,001,144	\$2,501,054 \$4,125,432 \$6,626,486	\$2,445,731 \$4,084,256 \$6,529,987	\$2,419,987 \$3,814,100 \$6,234,096	\$2,393,717 \$3,657,607 \$6,051,323	\$2,362,174 \$3,454,030 \$5,816,204	\$2,243,327 \$3,183,172 \$5,426,498	\$2,162,314 \$2,587,892 \$4,750,206	\$2,083,528 \$2,313,082 \$4,396,610	\$2,0)14,640 \$1,127,2)0 \$3,131,840	\$1,926,368 -\$801,351 \$1,125,017
Avoided Costa (Participant) Demand Energy Total	\$59,226,591	\$0 \$5471,288 \$500,288	\$0 \$1,185,323 \$1,185,323 \$1,099,363		\$0 \$2,235,447 \$2,235,447	\$0 \$2,704,296 \$2,794,296 \$	\$0 \$0.335,018 \$3,335,918 \$	05 05 05 05 05	\$0 \$4,487,325 \$4 ,487,325	\$0 \$5,198.585 \$5,098,585	\$0 \$5,721,065 \$5,720,065	\$0 \$6,366,422 \$6,366,422	08 057,038,450 051,038,450	\$0 \$7,736,966 \$7,736,966	\$0 \$8,462,810 \$8,462,810	\$0.216.847 \$9,216,847	\$0. \$9,419,617 \$9,419,617	\$9,626,849	\$ 01-97858,08 08	\$0 \$10,055,090 \$10,055,090	\$0 \$10.276.302 \$10,276,302
COST CALCULATIONS:																					
COSE Inputer Implementation Incernives Participant) in	\$1,016,038 \$1,252,000 \$2,211,830	\$1,044,216 \$ \$1,459,893 \$ \$2,756,570 \$	\$1,010,525 \$1 \$1,039,893 \$1 \$2,448,282 \$2	\$1,045,178 \$1 \$1,069,893 \$1 \$2,502,144 \$2	\$1,081,170 \$ \$1,099,893 \$ \$2,557,191 \$	\$1,124,214 \$ \$1,154,750 \$ \$2,613,449 \$	\$1,168,863 \$ \$1,211,489 \$ \$2,670,945 \$	\$1,215,176 \$1,270,166 \$2,729,706	\$1,263,213 \$1,330,838 \$2,789,760	\$1,313,039 \$1,393,565 \$2,851,134	\$1,364,717 \$1,458,408 \$2,913,859	\$1,418,317 \$1,525,429 \$2,977,964	\$1,473,907 \$1,594,693 \$3,043,479	\$1,531,562 \$1,666,267 \$3,110,436	\$1,591,356 \$1,740,218 \$3,178,865	\$1,647,651 \$1,778,503 \$3,248,801	\$1,705,994 \$1,817,630 \$3,320,274	\$1,766,459 \$1,857,618 \$3,393,320	\$1,829,126 \$1,898,486 \$3,467,973	\$1,894,077 \$1,940,252 \$3,544,269
Total Participant Costs	\$17,036,425	\$1,158,898	\$1,528,800 \$	\$1,573,732 \$1	\$1,602,364 \$1	\$1,632,181 \$	\$1,642,304	\$1,652,083 \$	\$1,661,496	\$1,670,525	\$1,679,146	\$1,687,338	\$1,695,078	\$1,702,342	\$1,709,105	\$1,715,342	\$1,753,079	\$1,791,647	\$1,831,063	\$1,871,347	\$1,912,516
Total RIM Costs	\$86,929,026	\$2,768,326	\$3,689,432 \$	\$3,749,781 \$4	\$4,350,518 \$4	\$ 4,975,359 \$	\$5,614,882 \$	\$6,280,371 \$	\$6,972,667	\$7,692,637	\$8,426,668	\$9,189,547	\$9,982,196	\$10,805,567	\$11,660,639 \$	\$12,548,421	\$12,845,772 \$	\$13,150,473	\$13,462,717	\$13,782,702 \$	\$14,110,631
Total Utility Costs	\$27,702,435	\$2,268,038	\$2,304,108	\$2,050,418 \$2	\$2,115,071 \$3	\$2,181,063	\$2,278,964	\$2,380,352 \$	\$2,485,342	\$2,594,051	\$2,706,604	\$2,823,125	\$2,943,746	\$3,068,601	\$3,197,829	\$3,331.575	\$3,426,155	\$3,523,624	\$3,624,077	\$3,727,612	\$3,834,329
Total TRC Costs	\$42,441,563	\$3,227,868	\$3,800,785	\$3,800,785 \$3,458,807 \$3,547,322		\$3,638,361	\$3,737,663 \$	\$ 808,658,5\$	\$3,944,882	\$4,052,973	\$4,164,173	\$4.278,576	\$4,396,281	\$4,517,387	\$4,641,998	\$4,770,222	\$4,896,452	\$5,026,268	\$5,159,779	\$5,297,100	\$5,438,345

Exhibit B Page 16 of 17

TABLE 7. RLI: DETAILED SUMMARY FOR 2006 START YEAR -- 20-YEAR PLANNING HORIZON SUMMARY OGRAM NAME: RESIDENTIAL LOW INCOME

PROGRAM NAME: RESIDENTI	8%	2.2%
PROGRAM N		Rate
	ount Rate	eal Escalation Rate

CE Analysis DOCKET (NEW AC w ROC) (11-03-06).xls

Participant Test Reitepaper Impact Measure Test Fridity Cost Test Fripal Resource Cost Test	Benefits \$54,065,133 \$27,760,368 \$27,760,368 \$27,760,368	Costs \$0 \$67,294,197 \$13,229,064 \$6,437,703	Net Benchis \$54,065,133 (\$39,535,829) \$14,531,304 \$21,322,065	B/CRatio NA 0.41 2.10 4.31																	
Completive Societies (New Societies I	I amount	2006	2007	2008	2002	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Animants, cartifications, Peak Demand Reduction (kW) Energy Savings (kWh)	ii yeze	591 2,633,290	1,182 5,266,579		1,773 2,364 7,899,869 10,533,159 1	2,954 13,166,449 1-	3,381 14,916,759 1	3,807 16,667,069	4,233 18,417,379 28	4,659 20,167,689 23	5,085 21,917,999 23	5,511	5,937 25,418,619 27	6,363 27,168,929 2u	6,789 28,919,239 3	7,215	7,215	7,215	7,215	7,215	7,215
Rates Demand (\$/kW) Energy (\$/kWh)		\$0.00	\$0.00	\$0.00	\$0.2101	\$0.00 \$0.2147	\$0.2194	\$0.00	\$0.00	\$0.00 \$0.2342	\$0.00 \$0.2394	\$0.00 \$0.2446	\$0.2500	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00	\$0.00
BENEFIT CALCULATIONS:		2006	2002	2008	2002	2010	2011	2007	2013	2014	2015	2016	2017	2018	2012	2020	2021	2022	2023	2024	2025
Avoided Coats (Utility, Ratepay Demand Energy Total	NPY \$27,760,368	\$106,555 \$288,652 \$395,207	\$213,824 \$564,390 \$778,214	\$321,334 \$807,309 \$1,128,642	\$213,824 \$321,334 \$428,565 \$0 \$564,390 \$807,309 \$1,125,868 \$1,302,210 \$778,214 \$1,128,642 \$1,554,433 \$1,302,210		\$ 1,407,753 \$	\$0 \$1,734,053 \$1,734,053 \$1	\$1.909,628 \$1,909,628 \$	\$0 \$1 \$2,195,449 \$2	\$1,075,153 \$1 \$2,605,630 \$3 \$3,770,783 \$5	\$1,288,525 \$1 \$3,752,108 \$3 \$5,040,633 \$4	\$1,247,431 \$1 \$3,687,846 \$3 \$4,935,277 \$4	\$1,223,708 \$1 \$3,422,400 \$1 \$4,646,108 \$1	\$1.201.408 \$ \$3.264.044 \$ \$4,465,452 \$	\$1,177,839 \$ \$3,067,530 \$ \$4,245,369 \$	\$1,118,579 \$ \$2,826,980 \$ \$3,945,559 \$	\$1,078,184 \$2,208,311 \$3,376,495	\$1,038,899 \$2,054,252 \$3,093,151	\$999,564 \$1,001,068 \$2,000,632	\$900,536 -\$711,081 \$248,854
Avoided Costa (Total Resource) Demand Energy Total	\$27,760,368	\$106,555 \$288,652 \$395,207	\$213,824 \$564,390 \$778,214	\$321,334 \$807,309 \$1,128,642	\$428,565 \$1,125,868 \$1,554,433	1	\$0 \$1,497,753 \$ \$1,497,753 \$	\$0 \$1,734,053 \$1,734,053	\$0.909,628 \$1,909,628	\$0 \$1 \$2,195,449 \$2 \$2,195,449 \$3	\$1,075,153 \$1 \$2,695,630 \$3 \$3,770,783 \$5	\$1,288,525 \$1 \$3,752,108 \$3 \$5,040,633 \$4	\$1,247,431 \$1 \$3,687,846 \$3 \$4,935,277	\$1,223,708 \$1 \$3,422,400 \$5 \$4,646,108 \$	\$1,201,408 \$ \$3,264,044 \$ \$4,465,452 \$	\$1,177,839 \$ \$3,067,530 \$ \$4,245,369 \$	\$1,118,579 \$ \$2,826,980 \$ \$3,945,559 \$	\$1,078,184 \$2,208,311 \$3,376,495	\$1,038,899 \$2,054,252 \$3,093,151	\$999,564 \$1,001,068 \$2,000,632	\$960,536 -\$711,681 \$248,854
Arrided Costs (Participant) Demand Energy Toral	\$54,065,133	\$0 \$518,231	\$1,059,265	\$0 \$1,623,853 \$1,623,853	1	\$0, \$2,826,815 \$1 \$2,826,815 \$1	\$0 \$3,273,061 \$:	\$0 \$3,737,573 \$1,737,573	\$ 0750020 50	\$0 \$4,723,766 \$5 \$4,723,766 \$5	\$0 \$5,246,674 \$5 \$5,246,674 \$5	\$0 \$5,790,303 \$6 \$5,790,303 \$6	\$0 \$6,355,312 \$6 \$7,355,310 \$6	\$6,942,380	\$1,552,202 \$1	\$0 \$8.185,496 \$8.185,496	\$0.8305,577 \$	i	ı		\$0
COST CALCULATIONS:																		88,549,620 8	88,/3/,/12	88,929,941	\$9,126,400
Coal Inpuis: Implementation Incentives Participant	ad Z	\$464,975 \$589,000	\$-188,027 \$589,000 \$0	\$507,177 \$589,000	\$522,493 \$589,000 \$0	\$539,490 \$589,000 \$0	\$558,577 \$601,958 \$0	\$578,358 \$615,201 \$0	\$598,859 \$628,735 \$0	\$620,107 \$642,568 \$0	\$642,128 \$656,704 \$0	\$664,953 \$671,152 \$0	\$685,917 \$	5713,132 5701,007 90	\$738,548 \$716,429 \$0	\$754,894 \$732,191 \$0	\$792,202 \$748,299 \$0	\$820,510 \$764,762 \$0	\$849,854 \$781,586	\$880,273 \$798,781 \$0	\$911,806 \$816,354 \$0
Total Participant Costs	35	3.	95	3	S,	0\$	9,	9\$	0 \$	0\$	3	Q.	0\$	3	ŝ.	0\$	2	3,	3	80	3,
Total RIM Costs	\$67,294,197	\$1,572,246	\$2,136,292	\$2,720,030 \$3,324,263		#\$ +02°526°E\$	\$4,433,595	\$4,931,132 \$5	\$5,448,534 \$5	9\$ 0++'986'\$\$	\$6,545,506 \$7,	\$7,126,408 \$7	8\$ 0+8'67'2\$	\$8,356,518 \$9	\$ 0,007,180	\$9,682,581 \$9	4\$ 620'906'6\$	\$10,134,892 \$1	\$10,369,152 \$1	\$10,608,995 \$1	\$10,854,560
Total Utility Costs	\$13,229,064	\$1,053,975	\$1,077,027	\$1,096,177	\$1,111,493 \$1	\$1,128,490 \$1	\$1,160,535 \$1	\$1,193,559 \$1	\$1,227,594 \$1	\$1,262,674 \$1	\$1,298,833 \$1.	\$1,336,105 \$1	\$1,374,528 \$1	\$1,414,139 \$1	\$1,454,978	\$1,497,084	\$1,540,501	\$1,585,272 \$	\$ 01-7189.15	\$ 1,679,054	\$1,728,160
Total TRC Costs	\$6,437,703	\$464,975	\$488,027	72,177	\$522,493	\$539,490	\$558,577	\$578,358	\$598,859	\$620,107	\$642,128	\$ 656,4353	\$688,611	\$713,132	\$738,548	\$764,894	\$792,202	\$820,510	\$849,854	\$880,273	\$911,806

Avoided Capacity and Energy Costs

					2050	\$127 \$0.101
	2027		\$127	\$0.101	2049	\$127 \$0.101
	2026		\$127	\$0.101	2048	\$127 \$0.101
	2025		\$133	-\$0.023	2047	\$127 \$0.101
	2024		\$139	\$0.033	2046	\$127 \$0.101
	2023		\$1+1	\$0.067	2045	\$127 \$0.101
	2022			\$0.075	2044	\$127 \$0.101
	2021		\$155	\$0.092	2043	\$127 \$0.101
	2020			\$0.100	2042	\$127
	2019		\$177	\$0.113	2041	\$127 \$0.101
	2018			\$0.126	2040	\$127
	2017			\$0.145	2039	\$0.101
ond.	2016			\$0.159	2038	\$127 \$0.101
years beyo	2015		\$211	\$0.123	2037	\$127
value for	2014		9€	\$0.109	2036	\$127 \$0.101
levelized	2013		9	\$0.104	2035	\$127
then the escalated levelized value for years beyond.	2012		9\$	\$0.104	2034	\$127 \$0.101
, then the	2011		0\$	\$0.100	2033	\$127
006-2025)	2010		0\$	\$0.107 \$0.102 \$0.107 \$0.099	2032	\$127
orizon (2	2006 2007 2008 2009 2010		\$180 \$181 \$181 \$181	\$0.107	2031	\$127 \$127 \$127 \$127 0.101 \$0.101 \$0.101 \$0.101
forecast	2008		\$181	\$0.102	2030	\$0.101
or 20-year	2007		\$181	\$0.107	2029	\$127
ear estimates fo	2006		\$18	\$0.110	2028	\$127
SCENARIO: Used year-by-year estimates for 20-year forecast horizon (2006-2025),		Electric Avoided Cost	Demand (\$/kW)	Average Energy-(\$/kWh).		Demand (\$/kW) Average Energy-(\$/kWh)

Source: HECO System Planning estimates (see below)

	2023		154	75	0.0717
	2022		160	80	0.0803
	2021		166	66	0.0987
	2020		175	107	0.1071
	2019		190	121	
	2018		206	135	0.1349 0.1209
	2017		225	155	0.1554
_proxy)	2016		250	170	0.1698
using CT	2015		226	132	0.1317 0.1698
v costs	2014		0	117	0.1166
nd enerc	2013		0	11	0.111
apcity a	2012		0	111	0.1114
woided (2011		0	108	0.1075
taining a	2010		0	106	0.1059
f file con	2009		194	114	0.1145
ched pd	2008		194	109	0.1094 0.1145 0.1059 0.1075 0.1114
(with att	2002		194	115	0.1148
om Alan Hee	2006		193	117	0.117398 0.1148
Data from 10/9/06 Email fron		Year-by-year Estimates	Demand (\$/kW)	Average Energy (\$/MWh)	Average Energy (\$/kWh)

148 143 35 -25 0.035 -0.025

2025

2024

Avoided Cost (Levelized) -- Costs held constant from 2026 to 2050.

Demand (\$\(\frac{4}{3} \text{KW} \)

Average Energy (\$\(\frac{4}{3} \text{KW} \)

\$0.1081

Adjustment of Avoided costs to reflect Net-to-System: Based on email from Alan Hee (8/9/06):
Please multiply the avoided costs from Exhibit 12 by (1-0.1117)÷(1-0.04864) = 0.93372 so that they can be multiply the gross generation levels of kw and kwh

Adjustment Factor:

0.9337

Derivation of DSM Utility Incentive If Equivalent to Earnings From a Similar Supply-Side Resource

In HECO/RMI-FSOP-IR-142 the Rocky Mountain Institute (RMI) was asked to provide details on the incentives the utility would be allowed to earn from a "negawatt-hour" if the incentive was equal to the amount the utility would earn building new supply side resources to generate and deliver a kilowatt-hour to serve the same load. In its response, RMI stated that, "HECO earns the allowed return on equity times the equity proportion of capital for these investments."

RMI's utility compensation mechanism was tied to avoided investment costs, and assumed that decoupling was in place so that lost margin recovery did not have to be taken into consideration. Tr. at 942-43 (Freedman); see Response to HECO/RMI-IR-142.

There was substantial discussion regarding the return on equity that the Company would forego as a result of implementing DSM programs. HECO also questioned RMI's calculation of the avoided return on equity, since RMI looked at annual revenue requirements and did not take into account the fact that the utility would receive a return on investment during every year the avoided plant was available. See Tr. at 900 (Violette), 143-46 (Freedman).

On page 3 of 5 of its response, RMI provided the following illustrative calculation of shareholder compensation:

Equity % * Equity Earning Requirement * Levelized Avoided Capacity Cost = Levelized Utility Earnings/Cumulative Savings KW

Where,

Equity % = 52% Equity Earning Requirement = 11.5% Levelized Avoided Cost = \$543.94/KW Levelized Utility Earnings = \$32.53/KW

Conceptually, RMI made two errors in its calculations: (1) it applied the equity percentage to the revenue requirements, rather than to rate base and (2) it did not gross up for income taxes. In the "No Future EE DSM" case, the capital investment is made in 2015. In the "With Future EE DSM" case, the capital investment is made in 2024. The differential average rate base investments between the coal unit installed in 2015 ("No Future EE DSM" case) and the coal unit installed in 2024 ("With Future EE DSM case") can be calculated. To determine the amount equivalent to the foregone net income of investing in the coal unit, the equity % times the rate of return on equity should be applied to the average rate base difference between the two plans (rather than the annual revenue requirements difference). In order for shareholders to net the equivalent net income amount over the study period, the amount collected from ratepayers would also have to be grossed-up for income (and revenue) taxes.

In HECO's view, the foregone return on equity would not necessarily serve as a basis for setting the utility compensation (and could result in substantially more compensation then the Company is requesting if correctly calculated), but HECO committed to providing a calculation of avoided capital costs so that that information would be available to the Commission. See Tr. at 915, 917-20 (Hee).

The attached worksheet contains two sets of calculations. The first (Columns A through E) recalculates RMI's revenue requirements methodology based on the deferral of a coal unit avoided by HECO's proposed energy efficiency DSM programs. While HECO disagrees with this methodology, it has recalculated RMI's methodology to provide a basis for understanding how it was done. The second calculation (Columns A, and F through H) derives the utility's earnings from the installation of the coal unit, and derives equivalent levelized net income and revenue per kw of incremental DSM demand savings.

In the "No Future EE DSM" case, the capital investment is made in 2015. In the "With Future EE DSM" case, the capital investment is made in 2024. This is a simplification of the avoided cost calculation submitted in CA/HECO-IR-9 page 49 of 55 (revised 08-24-06). The attached calculation excludes the "virtual DG" units and excludes all fixed O&M costs.

Column A shows the differential average rate base investments between the coal unit installed in 2015 ("No Future EE DSM" case) and the coal unit installed in 2024 ("With Future EE DSM case"). In years 2015-2023, the average rate base is the rate base investment associated with the coal unit installed in 2015. In years 2024 and 2025, the negative average rate base is the difference between the remaining rate base investment (since accumulated depreciation is subtracted) associated with a coal unit installed in 2015 ("No Future EE DSM" case) minus the rate base investment associated with a coal unit installed in 2024 ("With Future EE DSM" case). Column B shows the differential costs (i.e. revenue requirements excluding revenue taxes) associated with the differential average rate base investments. The total differential cost is \$316,479,640 on a net present value basis.

Column C is the EE DSM Peak Reduction (MW) [per CA/HECO-IR-9 (revised 8/24/06) page 49 of 55, col. 20]. The levelized cost of \$618.11/KW in column D is the levelized rate which, when applied to series of cumulative MW peak reductions in Column C, has the same net present value as the total differential cost (\$316,479,640 on a net present value basis).

Applying RMI's proposed methodology and using these investment assumptions would result in Utility Compensation of \$40.05/KW.

Therefore, assuming:

Equity % = 54%

Equity Earning Requirement = 12%

Levelized Avoided Cost = \$618.11/KW

Levelized Utility Earnings = 54% * 12% * \$618.11/KW = \$40.05/KW

Column E shows the amount of revenue, excluding revenue taxes, that the utility would be permitted to recover each year at RMI's proposed levelized utility earnings methodology. However, this significantly understates the amount which must be collected from ratepayers in order for the utility to stay whole.

To determine the amount for ratepayers to pay to be equivalent to the foregone net income of investing in the coal unit, the equity % times the rate of return on equity should be applied to the average RATE BASE (rather than the annual revenue requirements as RMI has done). The determination of this foregone net income and the conversion to revenue is the second calculation.

Column F shows the differential net income to shareholders when the equity % times the rate of return on equity is applied to the average RATE BASE in Column A. Return on equity applied to rate base provides the net income foregone by shareholders.

Column G is the incremental EE DSM load reduction per year. The levelized amount which must be collected from ratepayers is \$1,745.37/incremental KW, as shown in Column H. This is the levelized amount that when multiplied by the annual incremental EE DSM load reductions results in an income stream has the same net present value as the net present value of the net income foregone.

In order for shareholders to net the equivalent net income amount over the study period, the amount collected from ratepayers must also be grossed-up for income (and revenue) taxes. This amount is \$2,857.04 of revenue per incremental kw of DSM savings. At the net income level, it represents the NPV of the 20-year stream of earnings from a supply-side resource of a size equivalent to the incremental kw of DSM savings.

For example, for the nearly 8 mw of projected savings from energy efficiency DSM programs, annual revenue of \$22,685,000 is the equivalent of the NPV of the 20-year stream of revenue that would provide the utility with the same level of shareholder earnings from a similar amount of supply side resources. Note that unlike the recovery of the return of and on rate base that occurs each year through rates, this is a one-time recovery of the shareholder earnings for that increment of kw reduction. HECO has proposed that its utility incentive be capped at \$4 million each year.

Shareholder Incentive Rate Calculation Coal unit in 2015 deferred to 2024; \$ in 000)

			EE DSM Peak					
			Reduction (MW) per		Calculation			
		Differential Costs	CA/HECO-IR-9		Consistent with			
	Differential	[Revenue Requirement	(revised 8/24/06)	•	Response to	Differential Net	Incremental EE DSM	
Year	Average Rate Base	(Excluding Revenue Taxes)]	page 49 of 55, col. 2 0	Levelized Cost	HECO/RMI-FSOP- IR-142	Income to	Peak Reduction	Lauritana Martinaana
i cai						Shareholders	(MW)	Levelized Net Income
	(A)	(B)	(C)	(D)	(E)	(F)	(G)	(H)
2000	0.00	0.00	7.04	(Db) * (C)	(Ea) * (C)	(A)*(f)		(Hb) * (G)
2006	0.00	0.00	7.94	4,907.73	318.02	0.00	7.94	13,858.1 6
2007	0.00	0.00	17.43	10,770.85	697. 95	0.00	9.49	16,555. 91
2008	0.00	0.00	25.4 9	15,757. 81	1,021.11	0.00	8.07	14,081.87
20 09	0.00	0.00	33.3 8	20,631.3 6	1,336.91	0.00	7.88	13,761. 65
2010	0.00	0.00	41.04	25,365. 33	1,64 3.67	0.00	7.66	13,367.4 9
2011	0.00	0.00	47.39	29,294.14	1,898.26	0.00	6.00	10,472.24
2012	0.00	0.00	53.11	32,828.42	2,127. 28	0.00	6.00	10,472.24
2013	0.00	0.00	59.4 3	36,733.31	2,38 0.32	0.00	6.00	10,472.24
2014	0.00	0.00	66.0 3	40,812.28	2,644. 64	0.00	6.00	10,472.24
2015	773,571.80	108,639.95	72.74	44,959.75	2,913.3 9	50,127.4 5	6.00	10,472.24
2016	756,232. 90	132,776.69	78.70	48,647.95	3,152.3 9	49,003. 89	6.00	10,472.24
2017	722,096.21	127,982.55	84.47	52,213.76	3,383.45	46,791.83	6.00	10,472.24
2018	689,001.15	123,334.70	89.06	55,050.17	3,567.2 5	44,647.27	6.00	10,472.24
2019	656,869.5 8	118,822.17	93.45	57,764.87	3,743.16	42,565.15	6.00	10,472.24
2020	625,629.2 6	114,434.79	97.85	60,483.35	3,919.32	40,540.78	6.00	10,472.24
2021	595,213.33	110,163.20	99.54	61,523.39	3,986.72	38,569.82	6.00	10,472.24
2022	565,559.96	105,998.70	99.67	61,606.92	3,992.13	36,648.29	6.00	10,472.24
2023	536,333,28	101,894.12	99.70	61,625.93	3,993.36	34,754,40	6.00	10,472.24
2024	(502,168,50)	(43,952.43)	99.73	61,644.64	3,994.57	(32,540.52)	6.00	10,472.24
2025	(508,711.60)	(79,541.51)	99.76	61,663.58	3,995.80	(32,964.51)	6.00	10,472.24
Total		920,552. 95		844,285.55	54,709.70	318,143.85		228,708. 69
Net Present Val	ue	316,479.64		316,479.64	20,507.88	113,914.92	←	113,914.92
(a) Calculation (consistent with F	Response to HECO/F	RMI-FSOP-IR-142	2	40.05			
71. 1 P. J.					1			
(b) Levelized on	cumulative DS	M KVV	l	618.11	ŀ			
(c) Levelized or	n incremental D	SM KW						1,745.37
(d) Levelized Plu	us Income Tax (Gross-Up						2,857.04
(a) I evelized Pl	us Revenue Tax	Gross-Up						3,135.64

(b) Rate per EE DSM Peak KW that equals the corresponding present value

5.885%

- (d) b)/(1-income tax rate) to calculate the revenues needed to get the levelized amount net after income taxes
- (e) (c)/(1-revenue tax rate) to calculate the revenues needed to get the levelized amount net after income & revenue taxes

<u>Assumptions</u>

						Weighted Average
				Weighted	After-tax Weighted	Revenue
Cost of Capital Assumptions:		Weight	Rate	Average	Avera ge	Requirement
ST Debt		3.00%	6.00%	0.180%	0.110%	0.198%
LT Debt		36.00%	6.50%	2.340%	1.430%	2.568%
Preferred Stock		7.00%	8.00%	0.560%	0.560%	1.006%
Common Stock		54.00%	12.00%	6.48 <u>0%</u> (f)	6.480%	11.642%
			_	9.560%	8.579%	15.413%
			_		discount rate	
Tax Assumptions:						
Federal	35.00%	32.89%				
State	6.40%	6.02%				
		38.91%				

 PUC Fee
 0.500%

 Franchise Tax
 2.500%

 Revenue Tax Rate
 8.885%

Public Service Company Tax

 Coal unit in 2015
 802,690.00

 Coal unit in 2024
 1,047,328.00